STATEWIDE STORM WATER MANAGEMENT PLAN

CTSW-RT-02-008

California Department of Transportation
Division of Environmental Analysis
1120 N Street
Sacramento, California 95814

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ES.1 OVERVIEW OF STORM WATER MANAGEMENT PLAN

This Statewide Storm Water Management Plan (SWMP) describes a program to reduce the discharge of pollutants associated with the storm water drainage systems that serve highways and highway-related properties, facilities and activities. It identifies how the California Department of Transportation (Department) will comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) permit (Order No. 99-06-DWQ) (Permit) issued by the California State Water Resources Control Board (SWRCB) on July 15, 1999. The Permit requires that the previous edition of the Statewide SWMP be revised to include or describe procedures for implementing the requirements stated in several provisions of the Permit. This Statewide SWMP has been revised to show compliance with this requirement, although the format employed differs somewhat from the specific chapter designations outlined in the Permit.

This Statewide SWMP addresses the primary program elements of all the Department's activities, including:

- The Project Delivery Storm Water Management Program, which includes the Design Storm Water Management Program and the Construction Storm Water Management Program;
- The Maintenance Storm Water Management Program; and
- The Training and Public Education Program.

This Statewide SWMP also addresses assignment of responsibilities for implementing storm water management practices as well as monitoring (Monitoring and Research Program), program evaluation, and reporting activities.

ES.2 PROGRAM MANAGEMENT

Section 2, Program Management, addresses the organization and responsibilities for overall Permit compliance and storm water management program implementation within the Department. This section also identifies how the Department will coordinate storm water management with municipalities and Regional Water Quality Control Boards (RWQCBs) and the legal authority necessary to implement the Statewide SWMP. The Department's functions are divided between Headquarters and its 12 Districts. The Department uses a matrix organization with two lines of authority to coordinate Permit and Statewide SWMP compliance activities: traditional line management and functional program management. Traditional line management consists of the 12 District Directors and the functional Division Chiefs within each District (i.e., Planning, Design, Right of Way, Traffic Operations, Construction and Maintenance). Functional program management consists of the Director, the Deputy Directors, the Headquarters Division Chiefs (i.e., Environmental, Design, Construction and Maintenance), and their respective functional counterparts in the Districts (e.g., the functional Division Chiefs).

Implementation of the Statewide SWMP is initiated by directives from Headquarters. These directives are developed and communicated through both line management and functional program management as follows:

- ***Director:*** General directives issued by the Director are communicated to the Deputy Directors and to the District Directors.
- ***Headquarters Functional Programs****:* The Headquarters functional Divisions provide focused technical guidance, directives and monitoring to the District functional Divisions.

In this way, the functional Divisions in the Districts receive guidance both from line management and the Headquarters functional Division management. The Headquarters functional Divisions have the responsibility for adopting the policies with respect to storm water control that are subsequently implemented by the corresponding District programs.

The Department has adequate legal authority as required by the federal storm water regulations to manage storm water discharges occurring from Department-owned and maintained facilities and properties located within highway rights-of-way. The Department also has legal authority to manage construction activities within the Department's rights-of-way and to disconnect or prohibit illicit connections within its rights-of-way. The Department coordinates with other agencies that have appropriate legal authority to pursue and take enforcement action against persons causing or threatening to cause illegal discharges.

ES.3 BEST MANAGEMENT PRACTICES IDENTIFICATION AND IMPLEMENTATION

Section 3 of the Statewide SWMP describes the Best Management Practices (BMP) categories that are used by the Department, the process used to identify BMPs, and the BMP implementation process. These BMPs are applied to meet the maximum extent practicable (MEP) and best conventional technology/best available technology (BCT/BAT) requirements and to address compliance with water quality standards. The BMP categories identified in the SWMP are:

- **Category I BMPs:** Technology-based pollution prevention controls to meet MEP requirements for designing and maintaining roadways and related facilities.
  - Group A: Maintenance BMPs
  - Group B: Design pollution prevention BMPs
- **Category II BMPs:** Temporary construction BMPs to meet BCT/BAT requirements for construction projects that disturb 5 or more acres. (These BMPs are also applied to sites smaller than 5 acres.)
- **Category III BMPs:** Treatment controls.

The selected BMPs are identified in Appendix B.

ES.4 PROJECT DELIVERY STORM WATER MANAGEMENT PROGRAM

The Project Delivery Storm Water Management Program (Section 4) addresses the processes, procedures, and responsibilities for incorporating selected BMPs into the planning, design, and construction of new projects and expansion or reconstruction of existing facilities. The program includes responsibilities for the Department's Design and Construction personnel as well as construction contractors.

The Department has incorporated the consideration and selection of BMPs into existing Department project delivery procedures and milestones. Project Delivery personnel will assess the need for and opportunities to incorporate BMPs during the initial planning phases of new facilities and significant expansion or reconstruction of existing facilities. The Department considers and incorporates applicable permanent BMPs during project planning and design. Furthermore, under certain conditions, the project design team may specify temporary BMPs to be used during construction in addition to, or in place of, other temporary measures selected by contractors.

Pollution prevention BMPs (Category IB) are considered for all new facilities, as well as for existing facilities that are reconstructed or expanded.

Construction BMPs (Category II) are temporary BMPs that the Department has selected to meet BCT/BAT for construction projects. The selected temporary BMPs are consistent with the practices required under the State of California NPDES General Permit for Storm Water Discharges Associated with Construction Activities and are intended to achieve compliance with the requirements of the Permit. Where there is an existing or proposed storm drain system with a drainage pipe or collection ditch discharging into either a receiving water or a downstream storm drain system owned by others, approved treatment systems (Category III) will be considered and, where feasible, installed. This applies to both improvement projects and existing discharges.

As part of all transportation improvement projects, the project engineer will maximize the use of vegetation-covered soil areas. These areas are treatment zones known as "bio-filters" (overland flow areas) and "bio-swales" (vegetation-lined ditches).

ES.5 MAINTENANCE STORM WATER MANAGEMENT PROGRAM

The Maintenance Storm Water Management Program (Section 5) addresses the implementation of selected BMPs for maintenance activities. These BMPs are categorized for the following maintenance activities: flexible pavement; rigid pavement; slopes, drainage, and vegetation; litter, debris and graffiti; landscaping; bridges; other structures; electrical; traffic guidance; snow and ice control; storm maintenance; and management of maintenance facilities.

The Maintenance Storm Water Management Program includes BMPs to minimize potential storm water pollution from accidental spills, illicit connections, and illegal discharges and dumping. Illicit connections within the Department's rights-of-way are rare, due to restricted access. As appropriate, illegal discharges and dumping are reported to local enforcement agencies when discovered.

The Department operates highway maintenance facilities used for storage and repair. Selected BMPs for maintenance facilities are categorized under the following activities: material storage controls; housekeeping practices; vehicle equipment fueling; vehicle and equipment pressure washing; vehicle and equipment maintenance and repair; outdoor loading and unloading of materials; outdoor storage of materials; minimization, handling, and disposal of waste; and grounds maintenance. The Department will continue to reduce the potential for storm water pollution by the development and implementation of Facility Pollution Prevention Plans (FPPPs), which specify controls to minimize contact between storm water and the various substances at highway maintenance facilities. Periodic inspections are conducted to evaluate whether the BMPs are adequate and properly implemented.

ES.6 TRAINING AND PUBLIC EDUCATION PROGRAM

Section 6 describes the Department's internal Training and Public Education Program. The Department's policy and practice is to provide education and training to ensure that all of its employees have the knowledge and skills necessary to perform their functions effectively and efficiently.

The Department develops and presents employee training programs with curricula and materials tailored to specific topics and personnel levels. These programs are evaluated and updated periodically to ensure that the educational messages are both timely and effective.

Storm water training courses have been developed; these courses provide a comprehensive review of storm water pollution prevention concepts and practices. The curriculum focuses on storm water pollution prevention and consists of courses and other training activities. Storm water training materials are also incorporated into routine training programs. This training is reinforced and updated through educational reminders and a storm water Web site.

The Department also provides outreach to construction contractors to raise their awareness and understanding of the problems and causes of storm water pollution and to explain their responsibilities.

The Department currently uses a variety of methods to educate the public about the importance of managing storm water. The goals of the existing program are to:

- Inform the public regarding storm water quality issues that pertain to the Department's properties, facilities and activities; and

- Change public behavior regarding the release of potential pollutants (e.g., litter, spilled loads, and oil leaks).

This public outreach program consists of a variety of written materials, monthly and quarterly bulletins, a Web site, workshops and the Department's Adopt-a-Highway Program. The written materials are designed to appeal to the general public, in easy-to-read formats, while providing technical information on selected Department projects and activities. Cooperative public educational programs with local municipalities are described in Regional Work Plans.

The Department installs "No Dumping" and "Litter Fine" signs at selected locations on highways and freeways. Stenciled warnings prohibiting discharges to drain inlets at state-owned park-and-ride lots, rest areas, vista points, and other areas with pedestrian traffic are also used to increase public awareness.

During fiscal year (FY) 2000/2001, the Department initiated a public education research study to determine the effectiveness of public education in reducing highway litter.

ES.7 MONITORING AND RESEARCH PROGRAM

The Department's Monitoring and Research Program (Section 7) provides information on problem pollutants and the performance of storm water controls. This information is used to establish the need for new or improved BMPs. The monitoring of existing or pilot project BMPs helps in the evaluation of existing and potential BMPs.

The research program is used to further characterize pollutants (e.g., litter or pathogens) and to test control technologies. Other support activities include development of models and compiling the key water quality data necessary to make storm water management decisions.

The Department has currently organized the Monitoring and Research Program under four tasks. This organizational structure combines and renames tasks formerly identified for the Monitoring and Research Program. The tasks were reorganized to consolidate similar activities into four teams in place of the original seven teams. This provides some cost economies, reduces duplication, and enhances communication. No research items were deleted; however, some were combined. The modeling efforts were incorporated into Monitoring and Water Quality Research. Litter Management was incorporated into Storm Water Treatment Technology Research. Research Program Management is now accomplished by the leads of the four remaining teams. The current organizational tasks include:

- Monitoring and Water Quality Research;
- Watershed planning;
- Erosion control; and
- Storm Water Treatment Technology Research.

The Department has created project teams to address each of these tasks.

ES.8 PROGRAM EVALUATION

The Department's overall strategy for protecting receiving waters involves the use of effective storm water management practices and a process of continuous program improvement and refinement. As part of its storm water management program, the Department regularly reviews its activities, inspects its facilities, oversees and guides its personnel and conducts focused studies to obtain information that supports responsible management and allocation of the resources available to implement storm water quality efforts. These program evaluation efforts are described in Section 8.

The primary mechanism for accomplishing program evaluation and ensuring that front line personnel have adequate assistance to be successful is the day-to-day supervision by the District Division Chiefs. The Department's management provides oversight to ensure compliance with the Statewide SWMP. Such oversight includes observing and evaluating Design and Construction personnel as they implement the requirements of the Statewide SWMP on new projects and Maintenance Division personnel as they conduct highway maintenance activities.

The District Division Chief for Design supervises the District's Project Engineers to ensure compliance and, as needed, brings in assistance from within the District or from Headquarters. The District Division Chief for Construction supervises the District's Resident Engineers in a similar manner. The District Division Chief for Maintenance supervises the District's Area Superintendents to ensure compliance and, as needed, brings in assistance from within the District or from Headquarters.

In addition to day-to-day supervision by District managers, the Department's Headquarters program management (i.e., Design, Construction and Maintenance) provides focused follow-up checks with their counterpart District functional units on a regular basis. These checks involve:

- On-site visits;
- Periodic meetings; and
- Functional reviews of District activities by Headquarters.

The goals of the Department's self-audits are to evaluate the efficiency and effectiveness of the activities outlined in the Statewide SWMP; to provide a sound basis for re-directing or refining such activities; to recommend ways to revise or refine the Statewide SWMP, as needed; and to assess compliance with Permit and program requirements. The self-audit is viewed as independent from line management. Self-audits will be carried out by the Water Quality Program under the direction of the Director.

Program evaluation serves as a quality control mechanism to help the Department determine how well the activities identified in this Statewide SWMP are being implemented. The Department

has three major efforts to assess Statewide SWMP implementation and Permit compliance: Design Compliance Monitoring, Construction Compliance Monitoring and Maintenance Compliance Monitoring.

ES.9 REPORTING

The Department's reporting requirements include preparing the Annual Report, reporting noncompliance with the Statewide SWMP, and reporting discharges that cause or contribute to an exceedance of water quality standards. The Department's reporting procedures are described in Section 9.

The reports from the Monitoring and Research Program and the Program Evaluation efforts will be incorporated into the Annual Report, along with other Permit reporting requirements.

Instances of noncompliance involve nonpermitted non-storm water discharges or discharges that may significantly endanger health or the environment. Such discharges from operations of existing facilities or construction sites will be reported to the appropriate RWQCB. Advance notice of anticipated noncompliance will also be reported to the appropriate RWQCB.

ES.10 LOCATION-SPECIFIC REQUIREMENTS

Location-specific requirements describe regional exceptions/additions to the procedures and practices stated elsewhere in the Statewide SWMP. Such exceptions/additions reflect special conditions within the state and are discussed in Section 10.

1.1 INTRODUCTION

This Statewide Storm Water Management Plan (SWMP) was developed by the California Department of Transportation (the Department) for the purpose of describing the minimum procedures and practices the Department uses to reduce the discharge of pollutants in discharges from storm drainage systems owned or operated by the Department. This SWMP is the latest edition in a series of storm water management plans that have been progressively revised by the Department to reflect changes in the state of the art, changes in regulatory requirements, and changes in the Department's procedures and practices. This latest edition responds to the requirements set forth in the Department's Statewide National Pollutant Discharge Elimination System (NPDES) Storm Water Permit (Order No. 99-06-DWQ) adopted by the California State Water Resources Control Board (SWRCB) on July 15, 1999 (herein referred to as the Permit). The Department will evaluate the need for revision of the Statewide SWMP at least annually.

This Statewide SWMP addresses storm water pollution control related to highway planning, design, construction and maintenance activities throughout the state of California. In addition, this Statewide SWMP addresses assignment of responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities.

This overview section provides introductory information on the following topics:

- Storm water regulations that apply to the Department (Section 1.2);
- The types of properties, facilities, and activities covered by this Statewide SWMP (Section 1.3);
- The relationship between the Permit and this Statewide SWMP (Section 1.4);
- Regulatory roles and responsibilities (Section 1.5); and
- The contents and organization of this Statewide SWMP (Section 1.6).

This document is intended to govern the Department's storm water management activities on a statewide basis. However, there may be circumstances (e.g., by court order) under which the Department will be required to implement different and/or additional practices.

1.2 STORM WATER REGULATIONS THAT APPLY TO THE CALIFORNIA DEPARTMENT OF TRANSPORTATION

Federal environmental regulations based on the Clean Water Act (CWA) have evolved to require the control of pollutants from municipal separate storm sewer systems (MS4s), construction sites and industrial activities. Discharges from such sources were brought under the NPDES permit process by the 1987 CWA amendments and the subsequent 1990 promulgation of storm water

regulations by the U.S. Environmental Protection Agency (EPA). In California, EPA has delegated administration of the federal NPDES program to the SWRCB and the nine Regional Water Quality Control Boards (RWQCBs). The SWRCB has issued statewide general NPDES storm water permits for designated types of construction and industrial activities and has also developed and issued the Department's Permit.

Under the federal storm water regulations, portions of the Department's properties, facilities and activities come under the jurisdiction of NPDES storm water regulations for two primary reasons:

- The Department's highways and highway-related properties, facilities and activities are served by extensive storm drain systems that in urban areas are often connected to, and are considered to be comparable to, municipal separate storm sewer systems, which are covered explicitly in the federal storm water regulations.
- Construction of the Department's highways and related facilities often results in soil disturbance of areas greater than 2 hectares (5 acres), for which specific requirements are prescribed by the federal storm water regulations.

The Code of Federal Regulations (CFR), at 40 CFR 122.26(a)(iii) and (iv), requires that NPDES storm water permits be issued for discharges from large and medium MS4s. The regulations define the term "municipal separate storm sewer systems" to mean "a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains): (i) owned or operated by a state, city, town, borough, county…." The Department, as the owner and operator of an MS4, is subject to an NPDES MS4 permit in those areas of California specified under federal regulation (urban areas with population greater than 100,000). Furthermore, federal regulations (40 CFR 122.26) require discharges of storm water associated with construction activity, including clearing, grading and excavation activities, to obtain an NPDES Permit. Currently, small construction projects, that is, those that disturb less than 2 hectares (5 acres) of total land area and that are not part of a larger common plan of development, are exempted from NPDES Permit requirements. These requirements become more stringent on March 10, 2003. The criteria for small construction projects will be reduced to 0.5 hectares (1 acre) of total land disturbance.

Prior to the issuance of the Permit, the Department's storm water discharges were permitted under a variety of arrangements in its 12 Districts. Some Districts were covered in part by more than one NPDES MS4 permit; others were covered by none (except for construction projects that covered 2 hectares or more). The Permit and this Statewide SWMP provide a framework for consistent, effective and efficient implementation of storm water management practices statewide in all of the Department's Districts.

1.3 CALIFORNIA DEPARTMENT OF TRANSPORTATION'S FACILITIES AND COVERAGE OF STATEWIDE SWMP

The primary mission of the Department is to provide the people of California with a safe, efficient intermodal transportation system. This mission involves planning, designing, constructing and maintaining large-scale transportation facilities (e.g., freeways, highways, interchanges, bridges and tunnels). The Department also has the responsibility of accomplishing its mission in ways that comply with public policy and applicable regulations, including complying with the federally mandated storm water runoff program through complying with the Permit and by implementing an effective Statewide SWMP.

1.3.1 California Department of Transportation's Facilities and Storm Water Systems

To protect public safety and prevent property damage, the Department operates its storm water drainage systems to minimize flooding and prevent the presence of standing water on traveled surfaces. Runoff is typically directed off roadway surfaces (and other paved areas and non-paved areas within a right-of-way) via drainage systems within or adjacent to the Department's rights-of-way. In some locations, runoff drains from off-site areas onto the Department's rights-of-way or the Department's facility sites due to local topography and drainage patterns. In these cases, the Department's drainage systems are designed to convey not only the storm water contributed from the Department's property, but also storm water from off-site areas.

In urban areas, some drainage systems discharge directly to receiving waters; others discharge to municipal storm drain systems. Highways in urban settings typically have curbs and gutters, whereas freeways and rural highways typically have off-shoulder or median drainage swales.

The Department's facilities[1] are located in diverse settings, ranging from highly urbanized to very rural areas, including seacoasts, deserts, forests, farmland and mountainous terrain. Drainage systems that serve the Department's properties and facilities ultimately discharge storm water and permitted or exempt non-storm water to surface receiving waters as diverse as desert washes, intermittent creeks, perennial streams, lakes, estuaries, coastal waters and wetlands. The sensitivity of receiving waters to potential impacts from storm water discharges also varies widely, depending on factors such as location, local hydrology, the nature of the Department's facilities and drainage systems, discharges and pollutants from other sources, and the beneficial uses of the receiving waters.

1.3.2 Storm Water Quality Issues

Table 1-1 presents the average Department storm water runoff concentrations compared to the most stringent of the water quality objectives (WQOs) established by the Ocean Plan, Basin Plan,

[1] The term "facilities" means all Department highways and highway-related properties, facilities and activities, as described in Section 1.3.3.

or California Toxics Rule (CTR). For certain constituents/parameters, no numeric WQO is currently established. For those constituents/parameters, a narrative objective was used. The comparison shows that concentrations in storm water runoff from the Department's facilities exceed the numeric WQO values for nearly half of the constituents listed. It is important to note that the comparison for metals were made based on the dissolved fraction of the metal as specified in the CTR. In addition, the Department monitored volatile organic, semi-volatile organic, and other organic pesticides in highway and construction site runoff characterization studies, and those parameters were not detected. As more data become available, the Department will be in a better position to assess the actual or threatened impacts runoff from storm drainage systems owned or operated by the Department may have on receiving water quality. These data will be used for a variety of water quality issues, including determining if Department runoff causes or contributes to exceedances of water quality standards, development of total maximum daily loadings (TMDLs), and watershed planning. These data will also be used to characterize runoff from the Department's facilities and from storm drain systems owned or operated by the Department and to aid the Department in determining appropriate and adequate BMPs.

1.3.3 Coverage of Statewide SWMP

This Statewide SWMP describes the minimum procedures and practices used to reduce the discharge of pollutants from storm water drainage systems owned or operated by the Department. The Department's activities or properties that may be sources of pollutants are:

- Road surfaces and shoulders (highway rights-of-way);
- Highway-related facilities, including maintenance facilities, park-and-ride lots, rest areas, vista points, toll plazas and inspection stations; and
- Construction activities conducted within highway rights-of-way.

The specific Department owned or operated facilities addressed by the Statewide SWMP are identified in Appendix A.

Additional information has been added to this version of the Statewide SWMP to further explain the Department's third-party activities. Information previously included in Section 1.3.3 has been moved to Section 2.2.10 and consolidated with the new information to improve readability.

No changes have been made to Table 1-1 from the May 17, 2001, SWMP. This table may be updated in the future if additional monitoring data indicate changes are needed.

TABLE 1-1: COMPARISON OF THE DEPARTMENT'S STORM WATER RUNOFF QUALITY TO WATER QUALITY OBJECTIVES

Constituent	Abbreviation	Unit	WQO[1]	Average Storm Water Runoff Concentration From the Department's Facilities[2]			Is the Department's Average Storm Water Runoff Concentration Greater Than WQO?		
				Highways	Maintenance Yards	Construction Sites	Highways	Maintenance Yard	Construction Sites
Conventional									
Biological oxygen demand	BOD	mg/L	Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.	15.5	14.2	N/A	Numerical comparison is not possible		
Chemical oxygen demand	COD	mg/L	Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.	86	79	60	Numerical comparison is not possible		
pH	pH	pH units	The pH of inland surface waters shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels shall not be changed more than 0.5 units from natural conditions as a result of waste discharge. The pH of bays or estuaries shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels shall not be changed more than 0.2 units from natural conditions as a result of waste discharge.	7.4	7.3	7.9	Numerical comparison is not possible		

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Constituent	Abbreviation	Unit	WQO[1]	Average Storm Water Runoff Concentration From the Department's Facilities[2]			Is the Department's Average Storm Water Runoff Concentration Greater Than WQO?		
				Highways	Maintenance Yards	Construction Sites	Highways	Maintenance Yard	Construction Sites
Temperature	Temp.	°C	The natural receiving water temperature of surface waters shall not be altered by discharges of wastewater unless it can be demonstrated to the satisfaction of the RWQCB that such alteration in temperature does not adversely affect beneficial uses.	14	14	15	Numerical comparison is not possible		
Total dissolved solids	TDS	mg/L	Discharges of wastes or wastewater shall not increase the total dissolved solids content of receiving waters, unless it can be demonstrated to the satisfaction of the RWQCB that such an increase in total dissolved solids does not adversely affect beneficial uses of receiving waters.	118	70	195	Numerical comparison is not possible		
Total suspended solids	TSS	mg/L	Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.	160	125	500	Numerical comparison is not possible		

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				Highways	Maintenance Yards	Construction Sites	Highways	Maintenance Yard	Construction Sites
Turbidity	Turb.	NTU	Waters shall be free of changes in turbidity that cause nuisance or adversely affect the water for beneficial uses. Increases in turbidity shall not exceed natural levels by more than 10 percent.	60	170	700	Numerical comparison is not possible		
Litter/Trash	Trash	Lb/acre[3]	Waters shall not contain floating and settlable materials in concentrations that cause nuisance or adversely affect beneficial uses.	20.5	N/A	N/A	Numerical comparison is not possible		
Metals[4]									
Aluminum	Al	ug/L	1,000	155	N/A	N/A	No	N/A	N/A
Arsenic	As	ug/L	50	2.8	6.6	N/A	No	No	N/A
Cadmium	Cd	ug/L	2.2[5]	0.6	0.3	N/A	No	No	N/A
Chromium	Cr	ug/L	2	3.1	1.4	5.2	Yes	No	Yes
Copper	Cu	ug/L	3.1	15.8	9.3	6.8	Yes	Yes	Yes
Lead	Pb	ug/L	2	7.3	1.5	0.8	Yes	No	No
Mercury	Hg	ug/L	0.04	ND	ND	N/A			
Nickel	Ni	ug/L	5	6.3	2.4	3.2	Yes	No	No
Selenium	Se	ug/L	5	ND	N/A	ND	No	N/A	No
Silver	Ag	ug/L	1.9	0.6	ND	0.4	No	No	No
Zinc	Zn	ug/L	20	89.5	108	13.6	Yes	Yes	No

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Constituent	Abbreviation	Unit	WQO[1]	Average Storm Water Runoff Concentration From the Department's Facilities[2]			Is the Department's Average Storm Water Runoff Concentration Greater Than WQO?		
				Highways	Maintenance Yards	Construction Sites	Highways	Maintenance Yard	Construction Sites
Nutrients									
Ammonia	NH_3	mg/L	0.007[6]	1.8	0.9	0.4	Yes	Yes	Yes
Nitrate (N)	NO_3	mg/L	10	1.6	0.8	0.9	No	No	No
Nitrite (N)	NO_2	mg/L	1	0.2	0.1	0.2	No	No	No
Ortho-phosphate (P)	Ortho-P	mg/L	Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.	0.2	0.1	0.3	Numerical comparison is not possible		
Total Kjeldahl Nitrogen	TKN	mg/L		2.9	2	2.5	Numerical comparison is not possible		
Total Phosphorus	TP	mg/L		0.3	0.4	0.9	Numerical comparison is not possible		
Microbiological									
Fecal Coliform		MPN/100/mL	20	8,170	N/A	4,500	Yes	N/A	Yes
Total Coliform		MPN/100/mL	70	30,500	N/A	31,000	Yes	N/A	Yes

TABLE 1-1: COMPARISON OF THE DEPARTMENT'S STORM WATER RUNOFF QUALITY TO WATER QUALITY OBJECTIVES

Constituent	Abbreviation	Unit	WQO[1]	Average Storm Water Runoff Concentration From the Department's Facilities[2]			Is the Department's Average Storm Water Runoff Concentration Greater Than WQO?		
				Highways	Maintenance Yards	Construction Sites	Highways	Maintenance Yard	Construction Sites
Toxicity	Tox.	% Survival	Toxicity - All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. There shall be no acute toxicity in ambient waters. Acute toxicity is defined as a median of less than 90 percent survival, or less than 70 percent survival, 10 percent of the time, of test organisms in a 96-hour static or continuous flow test.	N/A[7]	N/A	N/A	Numerical comparison is not possible		
Oil and Grease	O&G	mg/L	Waters shall not contain oils, greases, waxes, or other similar materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses.	14.5	2.4	1.2	Numerical comparison is not possible		

TABLE 1-1: COMPARISON OF THE DEPARTMENT'S STORM WATER RUNOFF QUALITY TO WATER QUALITY OBJECTIVES

Constituent	Abbreviation	Unit	WQO[1]	Average Storm Water Runoff Concentration From the Department's Facilities[2]			Is the Department's Average Storm Water Runoff Concentration Greater Than WQO?		
				Highways	Maintenance Yards	Construction Sites	Highways	Maintenance Yard	Construction Sites
Pesticide									
Chlorpyrifos		ug/L	No individual pesticide or combination of pesticides shall reach concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations found in bottom sediments or aquatic life.	0.6	0.04	0.3	Numerical comparison is not possible		
Diazinon		ug/L	No individual pesticide or combination of pesticides shall reach concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations found in bottom sediments or aquatic life.	0.7	0.13	0.4	Numerical comparison is not possible		
Glyphosate		ug/L	700	39.6	N/A	N/A	No	N/A	N/A

1 Most stringent Water Quality Objective (WQO) based on the Basin Plans, California Toxics Rule and the Ocean Plan. Narrative statement was used for those constituents that numerical WQO was not available.
2 Average based on the 1997-98 and 1998-99 monitoring data.
3 Acre reported here is the area related to the Department's right-of-way.
4 Values shown are dissolved concentrations.
5 Function of the total hardness in the water body. Value corresponds to a total hardness of 100 mg/L.
6 pH and temperature dependent. Value shown corresponds to a pH of 7 and temperature of 15 °C.
7 Sufficient toxicity data is not available to report.

In various areas of the State, waters of the United States or waters of the State pass through, over or under the Department's property and facilities. Those waters may contain pollutants at the point at which they enter the Department's property and facilities. In those circumstances, the Department will be responsible only for pollutants contributed to such waters which are discharged from its point source and not for the pollutants present in those waters when they entered the Department's properties.

1.3.4 Emergency Response

Throughout the year conditions may arise that require the Department to conduct emergency activities to protect public health, safety and property. Conditions during the emergency activities may result in the Department not implementing elements of the SWMP. Such incidents are not considered noncompliance in accordance with the Federal Code of Regulations 40 CFR Section 122.41 (n)(1) through (4) which addresses upsets, such as emergency response for public safety. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations provided certain requirements are met [see 40 CFR Section 122.41(n)(3)].

1.4 RELATIONSHIP BETWEEN THE PERMIT AND THE STATEWIDE SWMP

The Permit directs the Department to implement and maintain an effective Statewide SWMP. Annually the Department is required to report on the SWMP's implementation and assess its effectiveness. The Permit also requires specific revisions in the Statewide SWMP submitted with the Permit application. The Statewide SWMP was approved by the SWRCB on May 17, 2001. Table 1-2 shows which sections of this Statewide SWMP address the information required by Provisions F through L of the Permit (Provision E.4 has been removed from the table in this version of the SWMP to eliminate a redundant reference). This paragraph has been updated to reflect the current status of the SWMP.

The Department will implement the revised SWMP approved by the SWRCB.

Appendix D consists of the Statewide Storm Water Quality Practice Guidelines hereinafter referred to as "Guidelines" which describe in detail the minimum Best Management Practices (BMPs) to be implemented by the Department to reduce pollutants in discharges from storm drain systems owned or operated by the Department. For each BMP, the Guidelines provide a description, a summary of appropriate applications and implementation details.

TABLE 1-2: ORGANIZATION OF INFORMATION REQUIRED BY PROVISIONS F THROUGH L OF PERMIT

Permit		Statewide SWMP	
Provision	**Topic**	**Section**	**Section Title**
		1	Overview of Storm Water Management Plan
F	Program Overview	2	Program Management
G	Program Management	2	Program Management
F	Program Overview	3	BMP Identification and Implementation
H	Construction Program Management	4	Project Delivery Storm Water Management Program (Includes the planning, design, and construction of new/improved transportation facilities)
I	Maintenance Program Management	5	Maintenance Storm Water Management Program
J	Training And Public Education	6	Training and Public Education Program
K	Program Evaluation/Reporting	7	Monitoring and Research Program
K	Program Evaluation/Reporting	8	Program Evaluation
K	Program Evaluation/Reporting	9	Reporting
L	Location-Specific Requirements	10	Location-Specific Requirements

Section 3 and Appendix B define the process the Department uses to identify, evaluate, approve, and implement BMPs. Approved BMPs to be implemented by the Department are described in detail in the Guidelines.

Although this Statewide SWMP presents programmatic requirements and provides general guidance, it does not contain the level of detailed guidance and requirements that are needed to serve personnel at all positions within the organization whose daily activities may have an impact on storm water quality. Such specific guidance is contained in a variety of other documents, including manuals, standards and specifications. A complete list and copies of the documents currently being used, excluding project-specific documents, have been provided to the SWRCB by the June 1, 2001, due date. New materials and updates developed will be addressed through the annual SWMP revision process. The SWMP will describe the materials or documents to be developed, what the material will cover, and who it is for and will provide a time schedule for the development and implementation of the material or document. Copies of all future materials and documents will be provided in future Annual Reports, and a summary of the materials and documents developed will be provided in the Annual Reports. The goal of the Department is to incorporate BMPs identified in this and subsequent SWMPs into the Department's general operational manuals. This allows the Department flexibility to make necessary modifications to expand or improve upon the detailed procedures within the framework of the Statewide SWMP.

The SWMP also encourages the Department to use innovative approaches for implementing BMPs presented in the SWMP and implementing new BMPs not yet addressed in this SWMP. For approved treatment BMPs, the Districts are required to review their proposed changes with the Department's Headquarters prior to implementing any changes to ensure treatment efficiencies based on siting, design, maintenance and operation requirements are not reduced as a result of the change.

The Department is required in various Sections of the SWMP to submit documents and reports that may be subject to the approval of the Executive Director of the SWRCB. The Department will submit these documents and reports as required. Once SWRCB has reviewed these submittals, the Executive Director will provide written comments to the Department, as appropriate, regarding the adequacy of these submittals to comply with the intent and requirements of the Permit and SWMP.

1.5 REGULATORY ROLES AND RESPONSIBILITIES

An important purpose of the Statewide SWMP and the Department's Storm Water Management Program is to ensure that those who direct and perform activities that may affect the quality of storm water system discharges are aware of their respective roles and responsibilities.

Figure 1-1 and the following paragraphs describe the respective roles of the regulatory agencies in administering the storm water regulatory program and the Permit.

The CWA (as amended) directs EPA to implement federal regulations governing water quality, including discharges from storm water drainage systems. The CWA also allows EPA to delegate NPDES permitting authority to states that have approved regulatory programs. The State of California is a delegated state and issues, monitors, and enforces NPDES permits through its legal authority provided by the California Water Code. EPA retains authority to approve, reject, issue, monitor, and enforce NPDES permits in California.

The SWRCB develops statewide policies and regulations required to effectively implement the NPDES program. The SWRCB developed and issued the Department's Permit. The SWRCB will generally communicate directly with the Department's Headquarters, which in turn will coordinate with the 12 Districts. The SWRCB and RWQCBs are responsible for enforcement of the Permit. As shown in Figure 1-2, one District may need to communicate with one or more RWQCBs. In most cases, two or more Districts are located within the jurisdiction of one RWQCB.

The nine RWQCBs, within their respective jurisdictions, provide program implementation at the District level. This oversight will include compliance inspections, program tracking, coordination and enforcement actions. In addition, the RWQCBs regulate other storm water dischargers. In this role, the RWQCBs communicate directly with the Districts. Figure 1-2 is a

map showing the relationship between District and RWQCB boundaries (see Appendix A for more detailed District information).

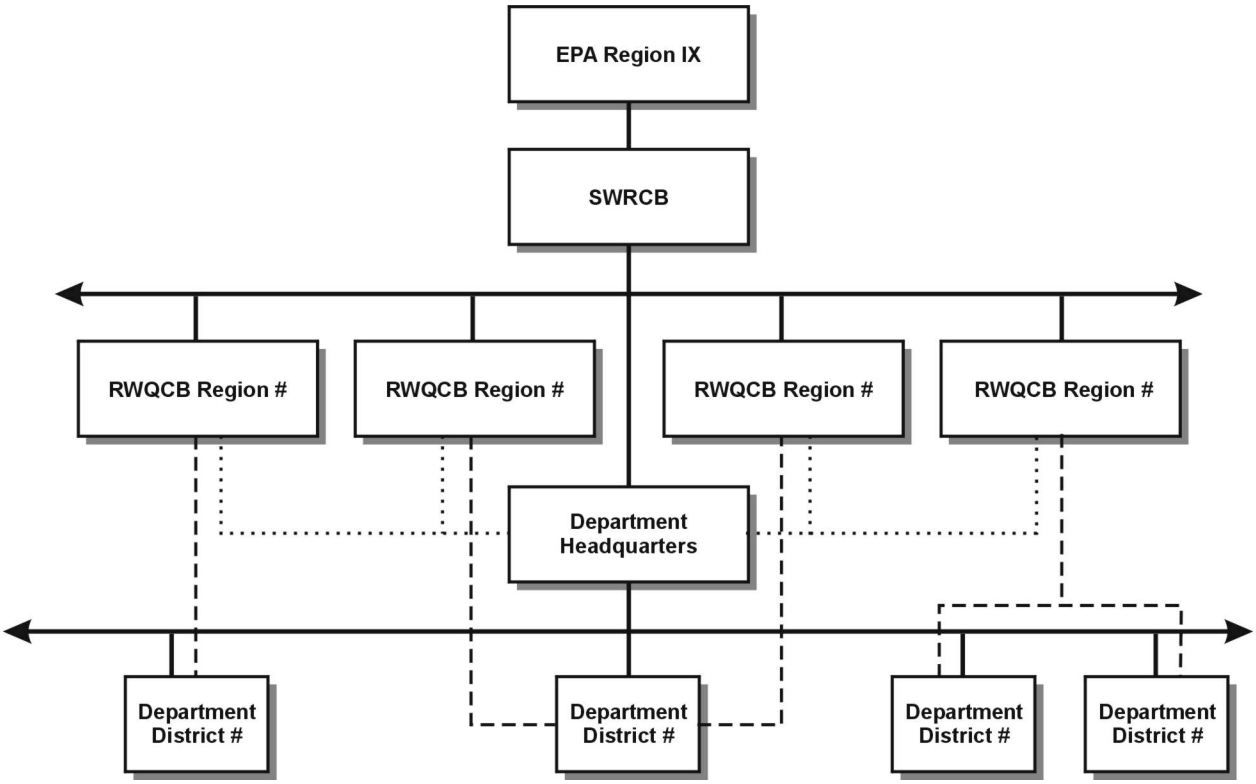

Figure 1-1
Regulatory Responsibilities Under Permit

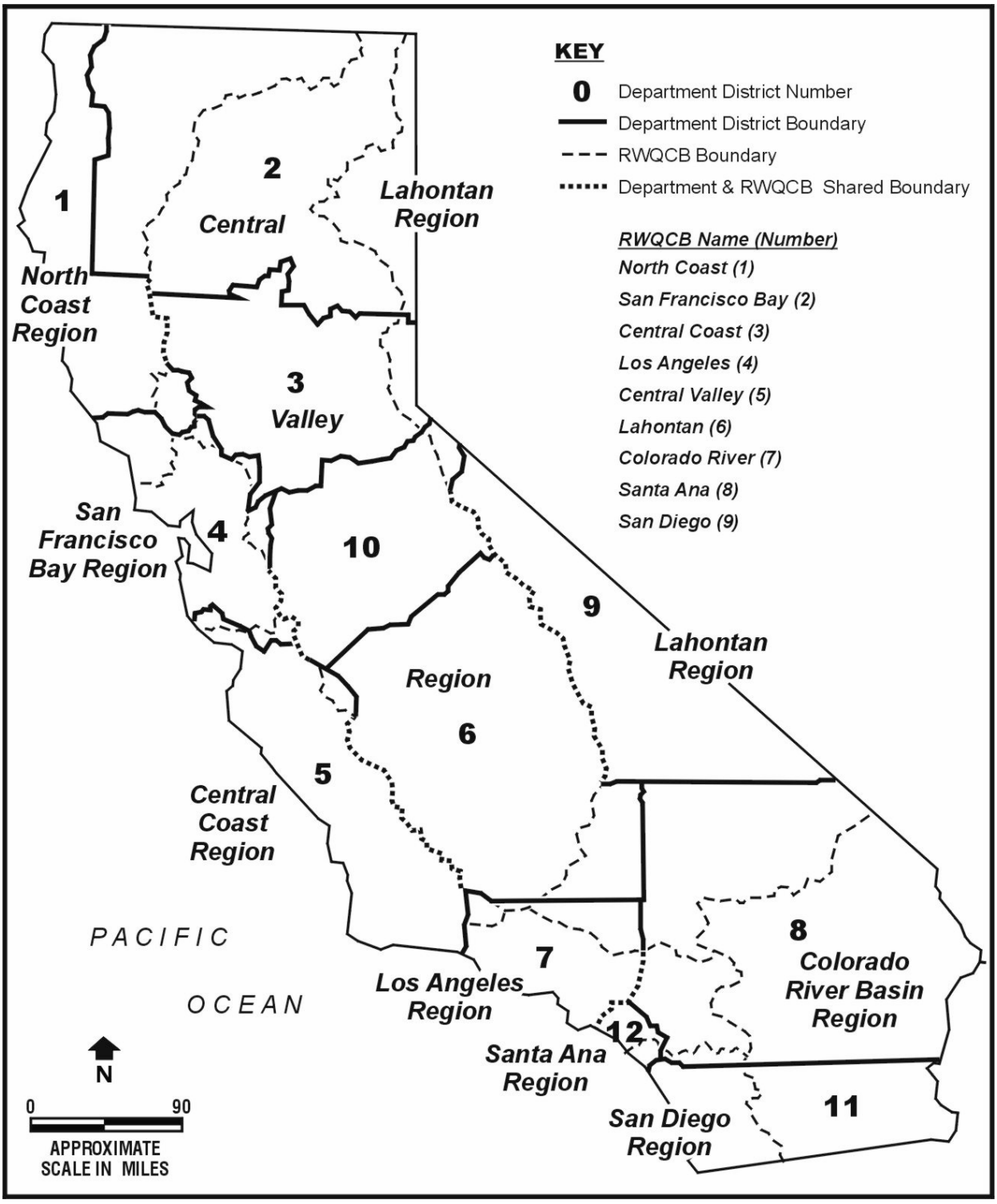

Figure 1-2
Map of California with RWQCB and District Boundaries

1.6 ORGANIZATION OF THIS STATEWIDE SWMP

The remainder of this document, including the Appendices, describes the essential program elements of the statewide storm water program.

- Section 2 describes the organization and responsibilities for overall Permit compliance and program implementation within the Department. Section 2 also describes coordination with other permittees and agencies.
- Section 3 describes the process for evaluating and selecting BMPs (details are presented in Appendix B).
- Section 4 describes the Project Delivery Storm Water Management Program, which includes the Design Storm Water Management Program, and the Construction Storm Water Management Program.
- Section 5 describes the Maintenance Storm Water Management Program.
- Section 6 describes the Training and Public Education Program.
- Section 7 describes the Monitoring and Research Program used to better define the discharges from specific types of the Department's facilities and the applied research activities used to develop the information and insight needed to refine the Department's storm water management program over time.
- Section 8 describes the methods the Department uses to evaluate the overall effectiveness of its storm water management program. Program evaluation consists of management oversight and guidance through tracking and follow-up activities and self-audits of construction projects and maintenance facilities.
- Section 9 describes how the Department will provide reports, including noncompliance reporting, to the SWRCB and RWQCBs.
- Section 10 summarizes requirements, procedures and practices that are unique to specific locations within individual Districts due to the nature of the facilities; the geographic, topographic and/or climatic features within the Districts; or particular local receiving water quality concerns or regulatory requirements.
- Appendix A provides a description of each of the Department's 12 Districts, including a map of each District, a listing of the District facilities and a map showing RWQCB boundaries.
- Appendix B describes the BMP evaluation and approval process, describes each BMP evaluated and categorizes the BMPs as approved, rejected or further research needed.
- Appendix C provides abbreviations, acronyms and definitions of terms used in the Statewide SWMP.

The Guidelines provide a description of each approved BMP included in the Statewide SWMP for statewide application.

2.1 OVERVIEW

The goal of the statewide SWMP is to protect and achieve water quality standards at all times. The minimum requirement is to ensure that pollutants in discharges from storm drain systems owned or operated by the Department are reduced to the maximum extent practicable and that pollutants in discharges from construction activities covered by the State of California General Permit for Storm Water Discharges Associated with Construction Activities are reduced by employing BAT/BCT.

This section describes the organizational structure of the Department with regard to storm water program management. This section is organized as follows:

- Section 2.2 describes the Department's organization and the management responsibilities of individuals and groups with respect to storm water quality management.
- Sections 2.3 and 2.4 describe how the Department will coordinate with MS4 permittees (e.g., cities and counties), which also have responsibilities for managing discharges from storm water drainage systems, and with RWQCBs, which enforce permit requirements.
- Section 2.5 describes how the Department will coordinate with the public and third parties.
- Section 2.6 describes the legal authority supporting the implementation of the Department's program.

2.2 STORM WATER MANAGEMENT RESPONSIBILITIES WITHIN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION

The Department's Headquarters is in Sacramento. The Department's functions are divided between Headquarters and its 12 Districts. The Department uses a matrix organization to provide statewide coordination and resource sharing. Within this matrix, the Department uses two lines of authority to coordinate and conduct Permit and Statewide SWMP compliance activities: traditional line management and functional program management. Traditional line management consists of the 12 District Directors and the functional Division Chiefs within each District (i.e., Planning, Design, Construction and Maintenance). Functional program management consists of the Director, the Deputy Directors, the Headquarters Division Chiefs (i.e., Environmental, Design, Construction, Right of Way, Maintenance and Traffic Operations), and their respective functional counterparts in the Districts (e.g., the functional Division Chiefs).

Implementation of the Statewide SWMP is initiated by directives from Headquarters. These directives are developed and communicated through both line management and functional program management as follows:

- ***Director:*** General directives issued by the Director are communicated to the Deputy Directors and to the District Directors.
- ***Headquarters Functional Divisions:*** The Headquarters functional Divisions provide focused technical guidance, directives and monitoring to the District functional Divisions.

In this way, the functional Divisions in the Districts receive guidance both from line management and the Headquarters functional program management. The Headquarters functional programs have the responsibility for adopting the policies with respect to storm water control that are subsequently implemented by the corresponding District programs. Follow-up on directives, implementation tracking and compliance monitoring are described in Section 8.

The organization chart shown in Figure 2-1 illustrates the chain of responsibilities for implementing the SWMP by line (Districts) and functional (Headquarters) organizations. Detailed discussions of the responsibilities of each organization to develop and implement the elements of the SWMP are provided in the following sections. Headquarters groups have responsibilities in areas of program and policy development, oversight, and monitoring and reporting. The Districts have the responsibility for implementing the storm water program in the field.

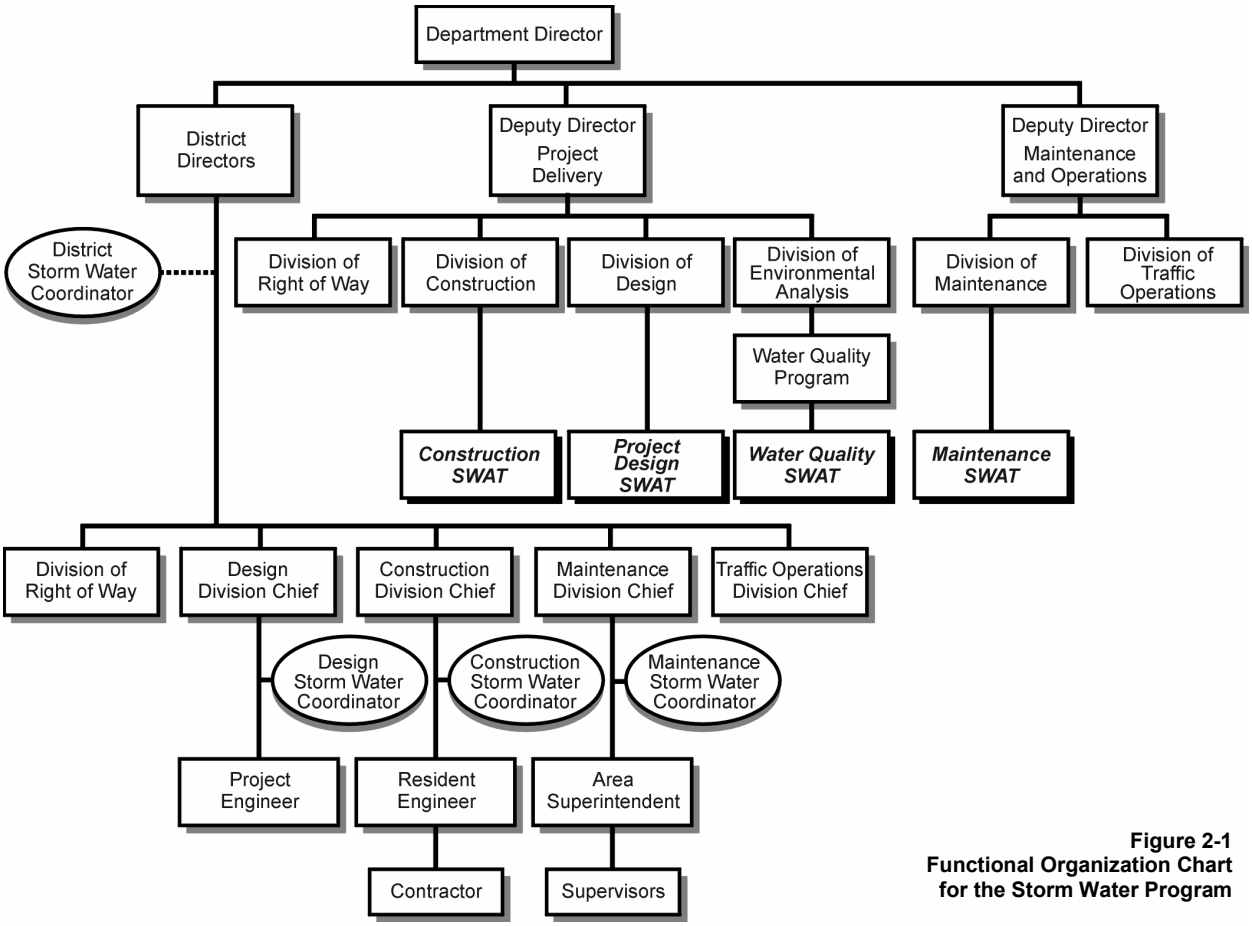

Figure 2-1
Functional Organization Chart for the Storm Water Program

The Water Quality Program (discussed in Section 2.2.3) has the overall responsibility for managing the Storm Water Management Program. The Water Quality Program coordinates implementation of the Statewide SWMP with the Districts and the functional programs. The Water Quality Program, together with the other programs in Project Delivery (discussed in Section 2.2.4) and Maintenance (discussed in Section 2.2.5), supports the Storm Water Advisory Teams (SWATs) (discussed in Section 2.2.7), which have a key role in evaluating and improving BMPs. The District NPDES Storm Water Coordinators (discussed in Section 2.2.9) are the main focal point for Permit issues. The Headquarters functional Divisions take the lead in facilitating implementation of the Statewide SWMP by the corresponding functional units in the Districts.

The discussions provided in this section of the SWMP describe the responsibilities for the overall SWMP development and implementation. Annually, the Districts prepare Regional Work Plans (Section 9.2.4) that provide specific tasks to be conducted during the reporting period.

2.2.1 Storm Water Management Responsibilities

The Department is committed to meeting the Permit requirements through implementation of the Statewide SWMP. It should be noted that the organizational arrangements within the Department are dynamic and may evolve to meet changing needs and priorities. In addition, District boundaries may change. However, the commitment to implement the Statewide SWMP will be maintained in any reorganization.

The following subsections describe the storm water management responsibilities of these organization units:

- The Department's Management;
- Headquarters Water Quality Program;
- Headquarters Project Delivery, including the Divisions of Design, Environmental Analysis, Right of Way and Construction;
- Headquarters Divisions of Maintenance and Traffic Operations;
- SWATs; and
- Districts (specific District functions are described in later sections of the Statewide SWMP).

2.2.2 California Department of Transportation's Management

2.2.2.1 Director of the California Department of Transportation

The Director of the Department is responsible for overall compliance with the Permit. The Director establishes Permit compliance policy; directs the development, implementation and evaluation of the Statewide SWMP; and seeks resources from the Legislature for implementation. The Director or designee will also certify that reports and plans submitted by Headquarters are in compliance with the Permit.

2.2.2.2 Division Chiefs

Division Chiefs are responsible for statewide implementation for policies and procedures necessary to implement the SWMP. Division Chiefs provide support to the respective Divisions with the Districts during the implementation of the SWMP.

2.2.3 Water Quality Program

The Water Quality Program assists the Headquarters functional programs, the Districts and the Department's transportation partners in complying with the Permit, SWMP and state and federal environmental laws.

The roles of the Water Quality Program in the Department's storm water program are as follows:

- **Regulatory Coordination**: The Water Quality Program coordinates overall storm water management program compliance with the SWRCB. In addition, the Water Quality Program assists the Districts in coordinating storm water compliance with the RWQCBs through the District NPDES Storm Water Coordinator.
- **Development and Updating of Statewide SWMP**: The Water Quality Program coordinates the ongoing development of the Statewide SWMP and Guidelines and implementation in conformance with the requirements of the Permit. This includes the coordination planning for statewide compliance and identifying area-specific storm water management needs with the Districts. The Water Quality Program also updates the Statewide SWMP annually as required in the Permit; the updating includes public input.
- **Evaluation and Approval of Treatment BMPs**: The Water Quality Program coordinates the evaluation and approval of the treatment BMPs identified for inclusion in the Statewide SWMP to manage the quality of discharges from storm water drainage systems associated with the Department's facilities. The process for evaluation and approval of BMPs is discussed in more detail in Section 3.2 and in Appendix B. The Water Quality Program also oversees the evaluation and approval of new storm water quality management techniques, products and designs. The Water Quality Program coordinates the Water Quality SWAT.
- **Water Quality Research Program**: The Water Quality Program coordinates research activities used to assess potential BMPs and investigate water quality issues.
- **Coordination with Districts and Functional Programs**: In consultation with the functional programs, the Water Quality Program provides general guidance regarding compliance with the Permit. This guidance includes providing information on the Permit requirements, Statewide SWMP implementation, storm water BMPs, compliance schedules, reporting formats, legal authorities, budgeting assistance and other information needed to effectively implement the Permit and Statewide SWMP requirements. In addition, the Water Quality Program provides feedback to the

Districts and the functional programs regarding the status of the Department's overall compliance with the Permit.

- **Monitoring**: The Water Quality Program oversees monitoring related to storm water quality management to advance the state of knowledge regarding water quality issues and to provide direction for making program improvements.
- **Program Evaluation**: The Water Quality Program coordinates the assessment of the effectiveness of implementing the Statewide SWMP. The Water Quality Program also conducts compliance monitoring of construction projects and maintenance facilities as described in Section 8.
- **Reporting**: The Water Quality Program coordinates the preparation of the Annual Report, which is discussed in Section 9.2.
- **Training**: The Water Quality Program provides annual refreshers and training for new employees as well as annual updates, as described in Section 6.2.

2.2.4 Project Delivery

Project Delivery includes the Design program, the Construction program, the Right of Way program, and associated functional units. Project Delivery provides guidance and direction to the District Design, Construction, Right of Way and Traffic Operations Divisions. Responsibility matrices showing functional relationships and key positions in the Project Delivery Storm Water Management Program are presented in Figures 2-2 and 2-3.

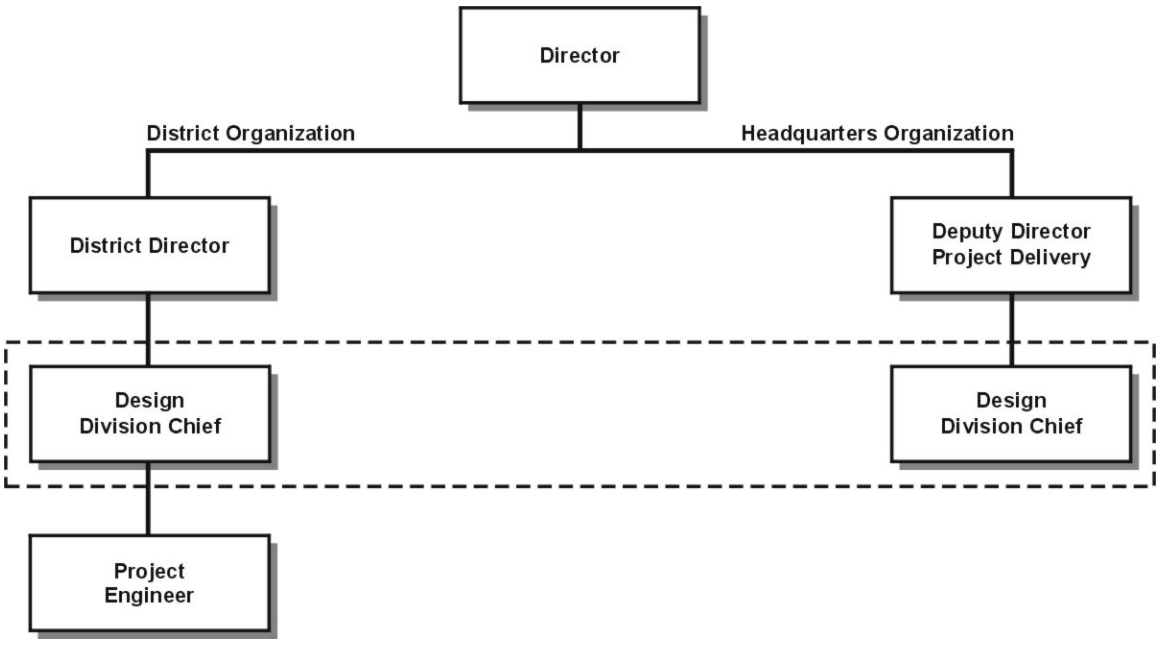

Figure 2-2
Design Storm Water
Management Responsibility Matrix

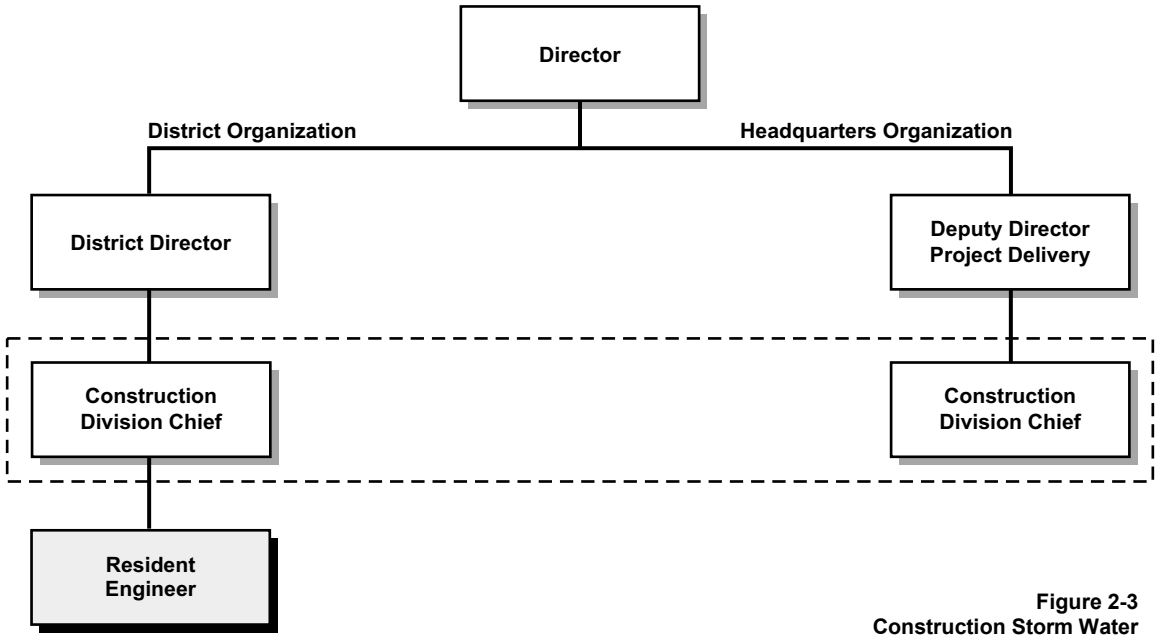

Figure 2-3
Construction Storm Water
Management Responsibility Matrix

2.2.4.1 Headquarters Design Division

The role of the Design Storm Water Management Program includes:

- **Coordination**: In coordination with the Water Quality Program, the Design Program provides general guidance to the Design Divisions in the Districts on the implementation of water quality management practices.
- **Program Evaluation**: The Design Program assesses District incorporation of storm water quality management features into facility designs.
- **Reporting**: The Design Program assists the Water Quality Program in the preparation of the Annual Report to the SWRCB, as it relates to Design activities.

The Design Division Chief is responsible for statewide implementation policies and procedures and the personnel of the Design program. This includes ensuring compliance with all elements of the Statewide SWMP required to be implemented by the Design Program.

2.2.4.2 Headquarters Construction Division

The role of the Construction Program includes:

- **Coordination:** In conjunction with the Water Quality Program, the Construction Division provides general guidance to Construction Divisions in the Districts on implementation of construction BMPs and the review of Storm Water Pollution Prevention Plans (SWPPPs) and Water Pollution Control Programs (WPCPs).

- **Program Evaluation**: The Construction Division assesses the District's implementation of storm water BMPs for managing the storm water discharges associated with the Department's construction projects.
- **Reporting**: The Construction Division assists the Water Quality Program in the preparation of the Annual Report to the SWRCB, as it relates to Construction activities.

The Construction Division Chief is responsible for statewide implementation policies and procedures and the personnel and equipment of the Construction Program. This includes ensuring compliance with all elements of the Statewide SWMP required to be implemented by the Construction Program.

2.2.5 Headquarters Maintenance Division

The role of the Maintenance Program includes:

- **Coordination:** In coordination with the Water Quality Program, the Headquarters Maintenance Division provides general guidance to the Maintenance Divisions in the Districts on the implementation of maintenance BMPs.
- **Program Evaluation**: The Headquarters Maintenance Division assesses District implementation of BMPs in managing the storm water discharges associated with the maintenance of the Department's facilities.
- **Reporting**: The Headquarters Maintenance Division assists the Water Quality Program in the preparation of the Annual Report to the SWRCB, as it relates to Maintenance activities.

Figure 2-4 presents the functional relationships and key positions within the Maintenance Storm Water Management Program.

The Maintenance Division Chief is responsible for statewide implementation policies and procedures and the personnel and equipment of the Maintenance Program. This includes ensuring compliance with all elements of the Statewide SWMP required to be implemented by the Maintenance Division.

2.2.6 Headquarters Traffic Operations and Right-of-Way Programs

The roles of the Traffic Operations and ROW Program in managing third-party activities have been better defined and their descriptions expanded in this version of the SWMP. Traffic Operations is primarily focused on third-party activities during construction. The ROW Program is primarily focused on maintenance activities by third parties.

The role of the Traffic Operations Program includes:

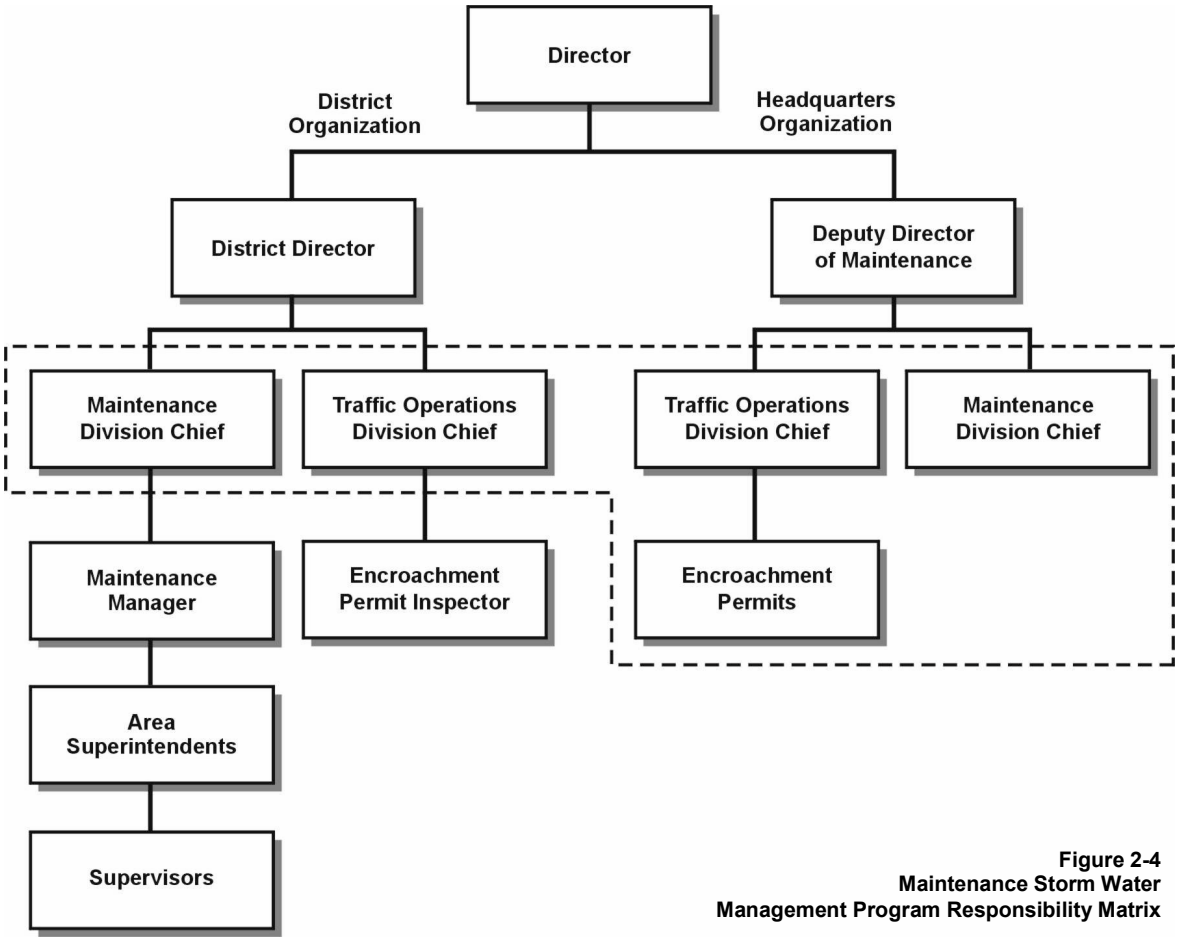

Figure 2-4
Maintenance Storm Water Management Program Responsibility Matrix

- Coordination: In coordination with the Water Quality Program, Encroachment Permits, a Division of Traffic Operations Program, provides general guidance to the Encroachment Permit Divisions in the Districts on the implementation of water quality management practices.
- Reporting: The Traffic Operations Program assists the Water Quality Program in the preparation of the Annual Report to the SWRCB, as it relates to Encroachment Permit activities.

Figure 2-4 presents the functional relationships and key positions within the Traffic Operations Storm Water Management Program.

The role of the ROW Program includes:

- Coordination. In coordination with WQ Program, ROW provides general guidance to District ROW on the implementation of storm water quality management practices.
- Reporting. The ROW program assists the WQ Program in the preparation of the Annual Report as it relates to ROW activities.

2.2.7 Storm Water Advisory Teams

The Department has established four Department-wide SWATs to evaluate new and improved BMPs and to develop procedures and guidance for implementing the Statewide SWMP:

- The Maintenance SWAT is composed of District Maintenance Storm Water Coordinators and representatives from the Headquarters Maintenance, Water Quality and Project Delivery Programs.
- The Project Design SWAT is composed of District representatives from Design, Construction and related functional units and representatives from the Headquarters Project Design, Water Quality and Maintenance Programs.
- The Construction SWAT is composed of District Construction Storm Water Coordinators and representatives from the Construction Program.
- The Water Quality SWAT is composed of the District NPDES Storm Water Coordinators; District representatives from Design, Construction, Maintenance and Traffic Operations; and representatives from the Headquarters Project Delivery, Maintenance and Water Quality Programs.

The SWAT meetings and activities are coordinated by the respective Headquarters functional programs.

2.2.8 District Responsibilities

The Districts have the primary responsibility for day-to-day implementation of the Statewide SWMP. Line responsibility for implementation lies with the District Director and each functional Division Chief.

2.2.8.1 District Design Divisions

The District is responsible for ensuring that a Notification of Construction is submitted to the appropriate RWQCB at least 30 days prior to the start of construction for projects that require a SWPPP (currently, projects 5 acres in size or greater require a SWPPP; in 2003, the SWPPP will be required of projects affecting 1 acre or more). In addition, the District is responsible for ensuring that a Notice of Completion is submitted to the RWQCB upon completion of construction and stabilization at a site. These responsibilities may be carried out by Project Delivery, Design Division or Construction Division, depending on the District.

The following positions within the Department are responsible for implementing the Design Storm Water Management Program within the Districts:

- **Design Division Chief:** The Design Division Chiefs are responsible for the implementation of the policies, procedures and personnel of the Design Program within their respective Districts. This includes ensuring compliance with all elements of the SWMP required to be implemented by the District Design Division.

- **Project Engineer:** The Project Engineer is responsible for the preparation of Project Study Reports and Project Reports during the project planning phase, and plans, specifications and estimates (PS&E) documents (otherwise known as contract plans or bid documents) during the design phase. The Project Engineer determines whether an SWPPP or a WPCP is required for the construction project and incorporates appropriate permanent BMPs into the project. See Section 4.2.1 for additional Project Engineer responsibilities.

2.2.8.2 District Construction Divisions

The following positions within the Department are responsible for implementing the Construction Storm Water Management Program within the Districts:

- **Construction Division Chief:** The Construction Division Chiefs are responsible for the implementation of the policies, procedures, personnel and equipment of the District Construction Program within their respective Districts. This includes ensuring compliance with all elements of the Statewide SWMP required to be implemented by the District Construction Division.
- **Construction Storm Water Coordinators:** The Construction Storm Water Coordinator is responsible for conducting inspections to assist the RE in ensuring that storm water controls are implemented on construction sites and to assist the REs in reviewing SWPPPs/WPCPs for adequacy.
- **Resident Engineer (RE):** The RE is the Department's representative charged with administering construction contracts and is responsible for ensuring that storm water controls are implemented on construction sites. The RE makes decisions regarding acceptability of material furnished and work performed, and exercises contractual authority to direct the contractor. The RE may impose sanctions if the contractor fails to take appropriate actions specified in the contract to correct deficiencies. See Section 4.2.2 for additional RE responsibilities.
- **Contractor:** The Contractor is responsible for carrying out the contract per the plans and specifications. The contract requires a contractor to develop and implement elements of the construction program subject to the review and approval of the RE. These activities include preparation, amendments and updates of the SWPPP/WPCP (subject to the approval of the RE), implementation of the SWPPP/WPCP, inspection and maintenance of temporary control practices (BMPs), construction of permanent BMPs and completion of the annual certification for projects requiring an SWPPP.

2.2.8.3 District Maintenance Divisions

The following positions within the Department are responsible for implementing the Maintenance Storm Water Management Program within the Districts:

- **Maintenance District Division Chiefs:** The Maintenance District Division Chiefs are responsible for the implementation of the policies, procedures, personnel and

equipment of the District Maintenance Storm Water Management Program within their respective Districts. This includes ensuring compliance with all elements of the SWMP required to be implemented by the District Maintenance Divisions.

- **Maintenance Managers:** The Maintenance Managers direct maintenance activities within regions or programs of a District. Each region is subdivided into Maintenance Areas. The Maintenance Manager provides direct supervision to the Maintenance Superintendent within each region or program.
- **Maintenance Superintendents:** The Superintendents direct maintenance activities within Maintenance and provide direction to Maintenance Supervisors. Maintenance Areas contain multiple maintenance facilities. The Superintendents are responsible for ensuring that maintenance BMPs are implemented in their jurisdictions.
- **Maintenance Supervisors:** The Maintenance Supervisors are responsible for direct supervision of a maintenance crew. Supervisors provide on-the-job training for specific crew assignments, including compliance with water quality protection requirements. Supervisors have on-site responsibility for BMP implementation.

2.2.9 Storm Water Coordinators

All Districts have designated NPDES Storm Water Coordinators. Other functional unit Storm Water Coordinators exist in the Planning, Design, Construction and Maintenance Divisions. The role of the Storm Water Coordinators is to facilitate implementation of the Storm Water Management Program. However, they do not have line supervisory authority. The District NPDES Storm Water Coordinators serve as liaison with the Water Quality Program. Liaison activities include conducting meetings related to storm water management issues with the coordinators from each functional unit and with other MS4 permittees to discuss problems and concerns. Liaison activities also include regular communications with representatives of the RWQCB. The functional unit coordinators will assist the District Divisions in implementing the Division's storm water management activities.

The District NPDES Storm Water Coordinators also provide coordination with the Department's Headquarters functional programs and the Districts. This aspect of the matrix organization is shown in Figure 2-5.

In addition, the NPDES Storm Water Coordinators have the following responsibilities:

- Serving as the point of contact for regulatory inquiries regarding implementation of the Statewide SWMP.
- Receiving and responding to public inquires made to the Districts regarding storm water management issues.
- Coordinating, tracking and reporting the District's response to illicit connections/illegal discharges (IC/IDs) and nonpermitted non-storm water discharges.
- Reporting instances of noncompliance to the RWQCBs unless otherwise indicated in the Regional Work Plan.

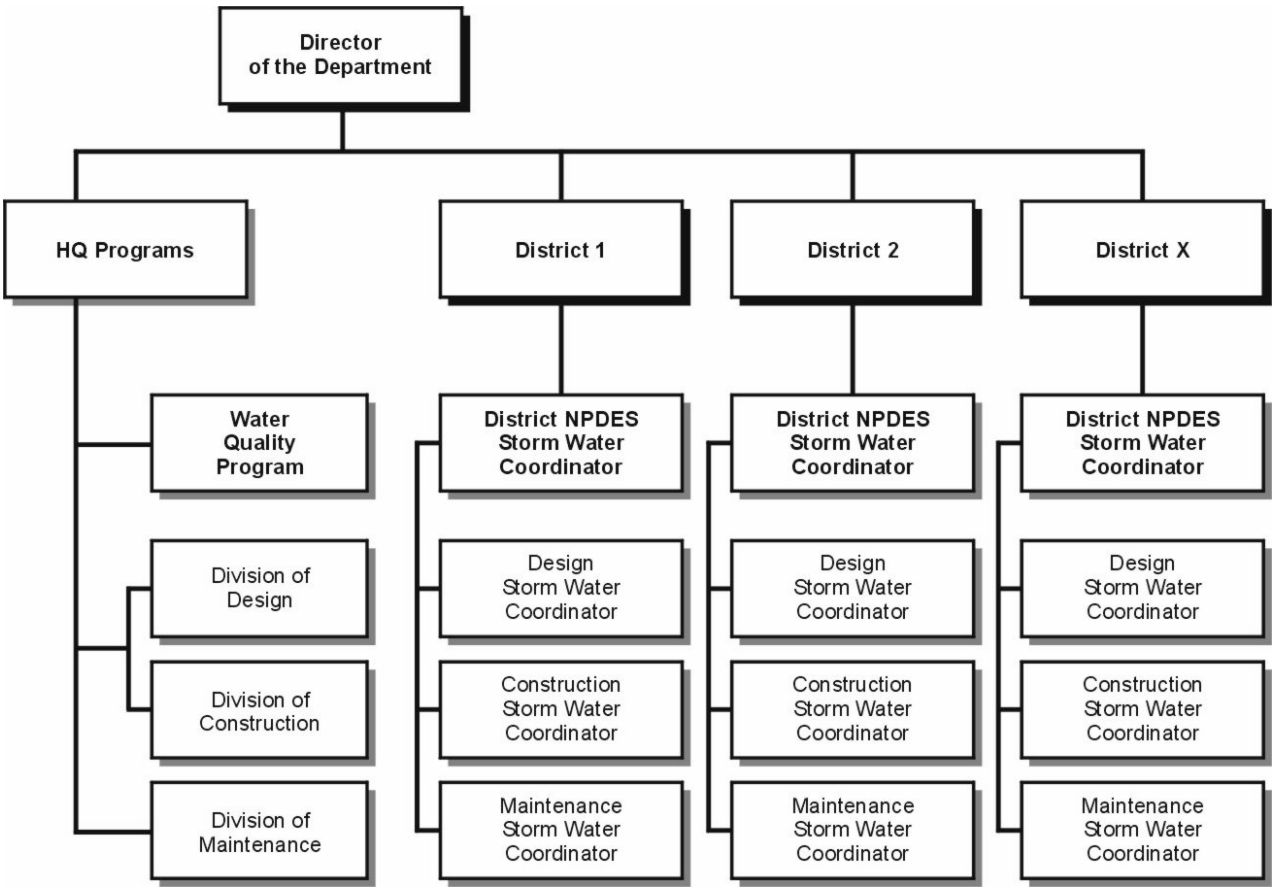

Figure 2-5
California Department of Transportation's Storm Water Program Management Organizational Matrix

2.2.10 Encroachment Permits and Third-Party Activities

Public and private third party activities on the Department's right-of-way are handled by the Division of Traffic Operations and Right of Way.

2.2.10.1 Traffic Operations

Any third parties (individuals, contractors, corporations, utilities, cities, counties and other government agencies) proposing to conduct any type of activity in the State right-of-way must obtain an Encroachment Permit. Encroachment Permits are issued by the Division of Traffic Operations. Such activities may include utility construction, roadway approaches and driveways, landscaping, drainage facilities, filming, special events, signals and lighting, geophysical testing, noise barrier construction, material removal, sidewalks, airspace development, and contractor's yards.

The cost of the project determines whether District Project Delivery or the Encroachment Permit Branch is responsible for oversight responsibilities. Encroachment Permits generally oversee the smaller projects of less than $1,000,000 while Design oversees larger encroachment projects. Encroachment Permit Inspectors inspect projects less than $300,000 while Construction Resident Engineers inspect projects greater than that amount.

An Encroachment Permit also requires compliance with the Department's standard plans and specifications, including storm water requirements. As in the Construction program, construction contractors of permitted projects must prepare and implement a program to effectively control water pollution during the construction of their projects.

The California Highway Patrol (CHP) operates and maintains several commercial vehicle enforcement facilities (weigh stations) on the Department's rights-of-way. Standard language outlining storm water requirements is inserted into agreements entered into between the Department and the CHP. These agreements are managed by the Headquarters Operations Program. The cleaning of commercial vehicle enforcement facilities is often accomplished by contractors. The CHP is responsible for ensuring that standard language outlining storm water requirements is inserted into agreements between the CHP and the contractors.

Discharges from storm drain systems owned or operated by the Department contain flows from sources other than facilities owned by the Department. Flows generated from facilities owned and operated by the Department are commonly referred to as "sole source" discharges. Other flows into the Department's drainage systems include flows allowed by encroachment permits, flows allowed through leases or other similar documents for third-party facilities located in the Department's rights-of-way, flows from adjacent properties outside the Department's rights-of-way, flows from illicit discharges, and flows that must be accepted due to drainage laws. When these other flows are determined to be significant sources of pollutants, they are to be controlled through legal authorities or other appropriate BMPs identified in this SWMP. When such flows are not subject to NPDES permit regulations, the Department will instead report the flows to the appropriate RWQCB for appropriate action. Other flows may be directly controlled by the Department through its own legal authorities provided through conditions specified in encroachment permits where appropriate, leases, or other legally binding documents and through implementing the Department's illicit connections BMP program identified in this SWMP. Other direct legal authorities may include monitoring and conducting inspections. Acknowledging that the Department does not have the traditional police powers associated with municipal government, the Department may meet the legal authority requirement by establishing interagency agreements with municipalities, special districts, or other agencies and establishing agreements with the California Highway Patrol or other state policing powers, etc. The Department may not have, or be able to acquire, adequate legal authority to control certain sources of pollutants (e.g., pesticides or brake pad dust) in other flows discharged to the Department's storm drain system. When this occurs, the Department will develop and implement appropriate source-specific public education and outreach programs and include them in its Public Education Program described in Section 6.4 of this SWMP. The Department will adequately demonstrate, document, and report in the Annual Report such situations to the SWRCB and appropriate RWQCB.

2.2.10.2 Right-of-Way

The Division of Right-of-Way (ROW) administers properties associated with the development of transportation projects. ROW acquires, maintains and leases suitable properties to public and private third parties. ROW inspects these properties for compliance with water quality management practices.

Prior to construction of a transportation project, ROW may contract to have any facilities on the properties cleared, demolished, or relocated. This demolition is performed by contractors who are required to comply with the Department's storm water permit.

Airspace is defined as any area within operating State highway right-of-way that can safely accommodate a privately managed use such as: parking lots, self storage units, commercial businesses, light industry and cellular telephone towers. ROW executes airspace leases with third parties for these kinds of uses. Existing leases are contracts that include language requiring that the lessee comply with all applicable local, state, and federal rules, laws and regulations. In the future, newly executed airspace leases will include appropriate storm water language.

The Department reviewed all airspace leases by the required due date of January 1, 2002. The results of this review are documented in the April 2003 Annual Report.

Water Quality controls may include treatment, inspections, monitoring, sampling, and reporting to the Department. A summary of the Department's progress on the review and revision of existing air space leases will be provided each year in the Annual Report.

As discussed in Section 2.6, illicit connections to the Department's storm drainage system are considered encroachments, and the Department will use its legal authority to remove or otherwise correct these inappropriate encroachments.

2.3 COORDINATION WITH MUNICIPAL STORM WATER PERMITTEES

2.3.1 Coordination with Local Agencies

Coordination with municipalities on storm water management responsibilities is the responsibility of the District Directors. In many cases, discharges from the Department's storm water drainage systems flow to storm water drainage systems owned and operated by municipalities (e.g., cities or counties) and vice versa. The municipalities and the Department are ultimately responsible for the quality of the discharges from their storm water drainage systems. To comply with its Permit, the Department will ensure pollutants are reduced or controlled in discharges from the Department's storm water drainage systems into municipal systems. Permitted municipalities will do the same for discharges from their facilities into the Department's storm drain system.

The Department coordinates storm water management activities with municipalities, flood control districts, RWQCBs and other entities as necessary or appropriate. Coordination is

implemented through formal and informal discussions, meetings, agreements and procedures. The coordination takes place at three levels:

- **Ongoing Maintenance Activities:** Maintenance supervisors coordinate with their municipal counterparts as part of their daily activities. Many of these activities include control or removal of materials that could potentially contaminate runoff.
- **Construction Projects:** District Design Division staff communicate with municipal planning staff and others on new projects to resolve storm water control and disposal issues.
- **Planning issues:** To identify opportunities for regional or shared storm water treatment controls and public education and outreach coordination and cooperation.

This coordination includes attending meetings, participating in special studies, identifying storm water run-on issues, reporting spills, etc. To facilitate regional compliance with MS4 permit requirements and to take advantage of opportunities for collaboration, the Department will share its Statewide SWMP with other agencies and, where appropriate, the District NPDES Storm Water Coordinator will become familiar with the storm water management plans prepared by other MS4 permittees.

Specific District-level coordination activities are described in the Regional Work Plans discussed in Section 2.6.

2.3.1.1 General Coordination Meetings

Coordination meetings are conducted on a countywide, regional or watershed basis with most MS4 permittees throughout the state. In addition, the Department participates in the California Storm Water Quality Task Force (SWQTF). This participation includes serving on the Executive Committee and taking part in the various activities of the SWQTF. The frequency of coordination meetings varies, depending on the participants and local water quality needs. Participation in these meetings provides the Department and the municipalities an opportunity to share information in the development and implementation of storm water management programs, including planning and design for capital and private development projects, construction activities, public education, IC/IDs and monitoring. These meetings also provide an opportunity for discussing noncompliance and/or project-specific issues that involve both the Department and the municipalities.

2.3.1.2 Special Coordination Meetings

Special meetings are conducted as necessary or appropriate by municipalities and the Department to coordinate implementation of water quality monitoring, public education, inspection and enforcement activities and other specific storm water management program issues.

In some cases, Districts participate in supporting training activities or other special initiatives with other MS4 permittees, RWQCBs and others.

2.3.1.3 Cooperative Agreements

On an ongoing basis, the Department implements projects to improve or add to the state highway system and support facilities. When local agency facilities (including storm water drainage systems) are involved or otherwise impacted, the Department enters into project-specific cooperative agreements with the local counties and cities that outline both short- and long-term roles and responsibilities. These agreements address the responsibilities of the Department when discharging into municipal storm water drainage systems and the responsibilities of municipalities' permittees when discharging into the Department's storm water drainage systems.

2.3.2 Encroachment Permits for Municipalities

Similar agreements or contracts will be developed when local agencies build roads that are ultimately dedicated to the Department and when state highways are operated or maintained by municipalities. Individuals, corporations, utilities, cities, counties and other governmental agencies conduct a variety of activities within the Department's highway rights-of-way. All agencies/developers proposing to conduct any activity within, under or over a Department highway right-of-way are required to obtain an encroachment permit. All encroachment permits issued will be conditioned to require implementation of all BMPs that would otherwise have been implemented if the Department were directly conducting these activities. The Department will inspect these activities to ensure compliance.

2.3.3 Information Sharing

2.3.3.1 General Storm Water Information

The Department maintains a Web site (http://www.dot.ca.gov/hq/env/stormwater/index.htm) that provides information on the Statewide SWMP. In addition to general information on the Department's program, this Web site presents information for use by other MS4 permittees under the following categories:

- Ongoing Department projects, such as:
  - Storm water research and monitoring studies;
  - Litter Management Program;
  - BMP retrofit pilot studies;
  - San Diego Water Quality Control Study; and
  - Compliance Program.

  Information on additional planned studies will be included as they are implemented.
- Continuing publications, such as:
  - Infolink (general information regarding the Permit);

- Water Quality NewsFlash (weekly update from Water Quality Unit);
- Maintenance bulletins;
- Project delivery bulletins; and
- Construction bulletins.

- Conferences/workshops (including information regarding storm water workshops held by the Department); and
- Water Quality Standards Database.

2.3.3.2 California Department of Transportation's Program Information

With the completion of the Statewide SWMP, the District Directors will send letters to MS4 permittees within their respective Districts announcing the adoption of the Permit and transmitting a copy of the Statewide SWMP. In addition, this letter will inform the MS4 permittees of the Department's storm water Web site, identify the District NPDES Storm Water Coordinator, and describe the Department's interest in communicating and collaborating with the MS4 permittees on water quality issues.

The Department, MS4 permittees and others share information on approaches and conclusions on different aspects of storm water programs on an ongoing basis. These programs include, but are not limited to, construction activities, public information, storm water monitoring and BMP technology.

On a case-by-case basis, the Department collaborates with MS4 permittees to identify and assess available resources to jointly implement common activities of their respective storm water management programs.

2.4 COORDINATION WITH RWQCBs

Although the Permit was issued by the SWRCB, the RWQCBs will be the primary agencies to carry out inspections and enforcement. The Department seeks to work closely with the RWQCBs. Coordination with RWQCBs is accomplished through several mechanisms, including:

- Annual reporting;
- Notification of noncompliance (notification and follow-up reports for reportable noncompliance as described in the plan for reporting noncompliance [Section 9.3]);
- Notification of spills[1] and identification of IC/IDs;

[1] Spill notification may take place through the procedures instituted by the California Office of Emergency Services (OES): initial notification goes to OES, which then notifies the appropriate RWQCB, Department of Fish & Game, and other concerned state agencies.

- Development of Regional Work Plans; and
- Meetings.

The point of contact for the RWQCB is the District NPDES Storm Water Coordinator. In addition, the Department coordinates with the RWQCBs, SWRCB and EPA through participation in the SWQTF. Also, the Department participates in watershed planning, as described in Section 7.3.3.

2.5 COORDINATION WITH THE PUBLIC

Public interface will occur through three primary mechanisms:

- **Public-initiated contact with the District offices regarding complaints, suggestions and requests:** Each District office has a widely publicized phone number. All public-initiated calls are directed to the District's Public Affairs Office. Calls are screened, logged and routed to the appropriate party within the District office. Water quality related calls are directed to the District NPDES Storm Water Coordinator.
- **The Public review opportunity as part of the annual report preparation process:** Draft Statewide SWMP updates and draft annual reports are made available for a public comment period. Workshops on these documents are noticed and held in both Northern and Southern California. The Department responds to comments received as these documents are finalized for submittal to the SWRCB each April 1.
- **Public input on proposed project alternatives during the environmental evaluation process:** Typically, one or more public hearings are held for major highway projects.

2.6 LEGAL AUTHORITY

The California Streets and Highways Code gives the Department jurisdiction over and responsibility for designing, building and maintaining the California Highway System. Pursuant to Section 90 of the Streets and Highways Code, "The department shall have full possession and control of all state highways and all property and rights in property acquired for state highway purposes. The department is authorized and directed to lay out and construct all state highways between the termini designated by law and on the locations as determined by the commission." Section 83 of the Streets and Highways Code states, "any public street or highway or portion thereof which is within the boundaries of a state highway, including a transferable highway adopted or designated as a state highway, shall constitute a part of the right-of-way of such state highway without compensation being paid therefore, and the department shall have jurisdiction thereover and responsibility for the maintenance thereof."

The legislature gave the Department incidental powers under Section 92 of the Code. This section states, "The Department may do any act necessary, convenient or proper for the

construction, improvement, maintenance or use of all highways which are under its jurisdiction, possession or control."

The Department possesses adequate legal authority to disconnect or prohibit point source illicit connections to its storm drain systems pursuant to Streets and Highways Code §660, which defines an encroachment as "any tower, pole, pole line, pipe, pipe line, fence, billboard, stand or building, or any structure, object of any kind or character not particularly mentioned in this section, or special event, which is in, under, or over any portion of the highway…." Thus, illicit connections to the Department's storm drainage system are considered encroachments. Streets and Highways Code §670 prohibits placing, changing or renewing an encroachment without a permit. Any person placing an encroachment without the authority of a permit is guilty of a misdemeanor. Generally, a permit granting an encroachment on a highway constitutes a mere revocable license which may be withdrawn at will (People by and through the Department of Public Works v. DiTomaso, 57 C.A. 2D 741).

Encroachment permits may also be conditioned to require compliance with storm water regulations and the requirements of the Department's program (see Section 2.2.9).

According to Streets and Highways Code §720, if any encroachment exists in, under or over any state highway, the Department may require the removal of such encroachment. Notice shall be given to the owner. The Department may immediately remove from any state highway any encroachment that:

- Is not removed, or the removal of which is not commenced and thereafter diligently prosecuted, prior to the expiration of five days from and after the service of the notice;
- Obstructs or prevents the use of such highway by the public;
- Consists of refuse; or
- Is an advertising sign (Streets and Highways Code §721).

The Department may remove any encroachment on the failure of the owner to comply with a notice or demand of the department and shall have an action to recover the expense of such removal, costs and expenses of suit and $10 per day (Streets and Highways Code §722). If the owner denies the existence of the encroachment or refuses to remove the encroachment, the Department may commence, in any court of competent jurisdiction, an action to abate the encroachment as a public nuisance (Streets and Highways Code §723). Any person owning, controlling, or placing, or causing or suffering to exist, any encroachment within any state highway after service of notice, in addition to any civil liability therefor, is guilty of a misdemeanor (Streets and Highways Code §724).

Within the Business, Transportation and Housing Agency of California, the CHP is established under the California Vehicle Code §2100 et seq. The CHP has full responsibility and primary jurisdiction for the administration and enforcement of the laws on all toll highways and state

highways constructed as freeway, including transit-related facilities located on or along the rights-of-way of those toll highways or freeways. City police officers and county sheriffs, while engaged primarily in general law enforcement duties, may incidentally enforce state and local traffic laws and ordinances on toll highways and state freeways within incorporated areas of the state. In any city having either a population in excess of 2,000,000 or an area of more than 300 square miles, city police officers shall have full responsibility and primary jurisdiction of the administrative and enforcement of those laws and ordinances, unless the city council of the city by resolution requests administration and enforcement of those laws by the commissioner of the CHP (Vehicle Code §2400).

The CHP may enforce those provisions relating to the transportation of hazardous waste found in Health and Safety Code Section 25160 et seq., which requires a manifest for the transport of hazardous waste. In addition, the CHP may enforce the provisions of the Hazardous Waste Haulers Act in Health and Safety Code Section 25167.1 et seq., which requires every transporter of hazardous waste to respond and pay for damages for environmental restoration, including restitution for the loss, damage or destruction of natural resources.

The CHP shall serve as the statewide information, assistance and notification coordinator for all hazardous substance spill incidents occurring on highways within the State of California (Vehicle Code §2453).

In addition to local antilitter ordinances, the Department relies on Sections 23112, 23113, 23114 and 23115 of the Vehicle Code as legal authority to prevent spills, dumping or disposal of materials on the highways and freeways under its jurisdiction.

- Section 23112 states:

  No person shall throw or deposit, nor shall the registered owner or the driver, if such owner is not then present in the vehicle, aid or abet in the throwing or depositing upon any highway any bottle, can, garbage, glass, nail, offal, paper, wire, any substance likely to injure or damage traffic using the highway, or any noisome, nauseous, or offensive matter of any kind.

  No person shall place, deposit, or dump, or cause to be placed, deposited, or dumped, any rocks, refuse, garbage, or dirt in or upon any highway, including any portion of the right-of-way thereof, without the consent of the state or local agency having jurisdiction over the highway.

- Section 23113 states:

  Any person who drops, dumps, deposits, places or throws, or causes or permits to be dropped, dumped, deposited, placed or thrown, upon any highway or street any material described in Section 23112 or in subdivision (d) of Section 23114 shall immediately remove the material or cause the material to be removed.

  If the person fails to comply with subdivision (a), the governmental agency responsible for the maintenance of the street or highway on which the material has been deposited may remove the material and collect, by civil action, if necessary, the

actual cost of the removal operation in addition to any other damages authorized by law from the person made responsible under subdivision (a).

- Section 23114 states (in pertinent part):

  No vehicle shall be driven or moved on any highway unless the vehicle is so constructed, covered, or loaded as to prevent any of its contents or load other than clear water or feathers from live birds from dropping, sifting, leaking, blowing, spilling, or otherwise escaping from the vehicle.

- Section 23115 of the Vehicle Code states (in pertinent part):

  No vehicle loaded with garbage, swill, cans, bottles, wastepapers, ashes, refuse, trash, or rubbish, or any other noisome, nauseous, or offensive matter, or anything being transported to a dump site for disposal shall be driven or moved upon any highway unless the load is totally covered in a manner which will prevent the load or any part of the load from spilling or falling from the vehicle.

The Department relies on the CHP and local police forces for enforcement of all local laws and ordinances, as outlined above. These local laws and ordinances protect the storm water drainage systems from illicit discharges and spills. The CHP, sheriffs and local police departments possess the appropriate legal authority to pursue and take enforcement actions against persons causing, or threatening to cause, illegal discharges. The Department possesses the authority to recover the costs associated with the cleanup and other activities resulting from illegal discharges.

The Department will control the contribution of pollutants in discharges of storm water from industrial sites and activities (including construction) located within Department-owned rights-of-way to the waters of the United States as described in this Statewide SWMP.

3.1 OVERVIEW

This section describes how the Department identifies and implements BMPs. This section is organized as follows:

- Section 3.2. describes the BMP categories used by the Department.
- Section 3.3 describes the steps involved in adopting BMPs.
- Section 3.4 describes the BMP implementation process.

The process can be divided into two main components: (1) identifying, evaluating and approving the BMPs that are to be considered for the Department's facilities (i.e., creating the BMP "tool box") and (2) selecting specific BMPs from the toolbox for use on a particular site or facility.

3.2 BMPs

3.2.1 Background

BMPs are designed and implemented to reduce the discharge of pollutants from the Department's storm drain system to the "maximum extent practicable" (MEP), and to control the discharge of pollutants from regulated construction projects by employing "best conventional technology" (BCT) and "best available technology" (BAT).

Additionally, if it is determined that the Department's discharges are causing or contributing to an exceedance of an applicable water quality standard, and if waste load allocations (from TMDLs) are not in place, then the Department will implement control measures and other actions per Provision C of the Permit.

As used in this document, the term BMP refers to operational activities or physical controls that are applied to storm water and other runoff to reduce the discharge of pollutants. Accordingly, the term BMP refers to both structural and nonstructural controls that have direct effects on the release, transport or discharge of pollutants. This Statewide SWMP does not use the term BMP when referring to exclusively administrative activities or procedures, such as internal audits and inspections.

3.2.2 BMP Categories

Three general categories of BMPs have been identified for use in the Statewide SWMP:

- **Category I BMPs:** Technology-based pollution prevention controls to meet the maximum extent practicable (MEP) requirements for designing and maintaining roadways and related facilities.

  - **Group A:** Maintenance BMPs

    BMPs applicable to all maintenance operations (i.e., litter pickup, street sweeping, etc.)

  - **Group B:** Design pollution prevention BMPs

    BMPs applicable to the design of new facilities or major renovations of existing facilities (i.e., permanent soil stabilization, ditch channel lining systems, etc.)

- **Category II BMPs:** Controls to meet BCT/BAT requirements for construction projects that disturb 5 or more acres.
- **Category III BMPs:** Treatment BMPs to meet MEP requirements.

Specific BMPs that have been evaluated for these categories are listed in Appendix B.

3.2.3 BMP Groups (Within Categories)

Each BMP category is further subdivided into the following groups:

- ***Approved:*** These BMPs have been approved by the Department for statewide implementation. Implementation is dependent on the site conditions and BMP applicability of deployment described as part of the BMP.
- ***Further Research Needed:*** Statewide implementation of BMPs in this grouping is deferred, unless noted otherwise, until further research is completed.
- ***Rejected:*** These BMPs have been evaluated and rejected.

3.3 BMP ADOPTION PROCEDURES

3.3.1 Overview

This section describes how the Department will identify, evaluate and approve BMPs for consideration into the Department's activities and projects on a statewide basis. The SWMP provides a "BMP toolbox" that the Department's personnel can draw upon when making implementation plans and decisions at a District-specific or site-specific level. The use of BMPs on a particular site is dependent on the "conditions of deployment," which are specified as part of the description of the BMPs, and on the site-specific environment, including pollutants of concern in existing or new discharges and within the receiving water(s). The selection of BMPs for a specific construction site, section of roadway or maintenance facility is described in the Guidelines.

The evaluation criteria and the approved and rejected BMPs are presented in Appendix B. A listing of the BMP categories and the programs responsible for their implementation is shown in Table 3-1. Figure 3-1 provides a graphic summary of the BMP identification, evaluation and

approval process. Approved BMPs can be rejected at any stage of this process based on the BMP evaluations performed.

TABLE 3-1: BMP CATEGORIES AND RESPONSIBLE DIVISIONS

BMP Category	Description	Responsible Division for BMP Implementation
Category IA	**Maintenance BMPs:** litter pickup, toxics control, street sweeping, etc.	Division of Maintenance
Category IB	**Design Pollution Prevention BMPs:** permanent soil stabilization systems, etc.	Division of Design
Category II	**Construction Site BMPs:** temporary runoff control	Division of Construction
Category III	T**reatment BMPs:** permanent treatment devices and facilities	Divisions of Design, Construction and Maintenance

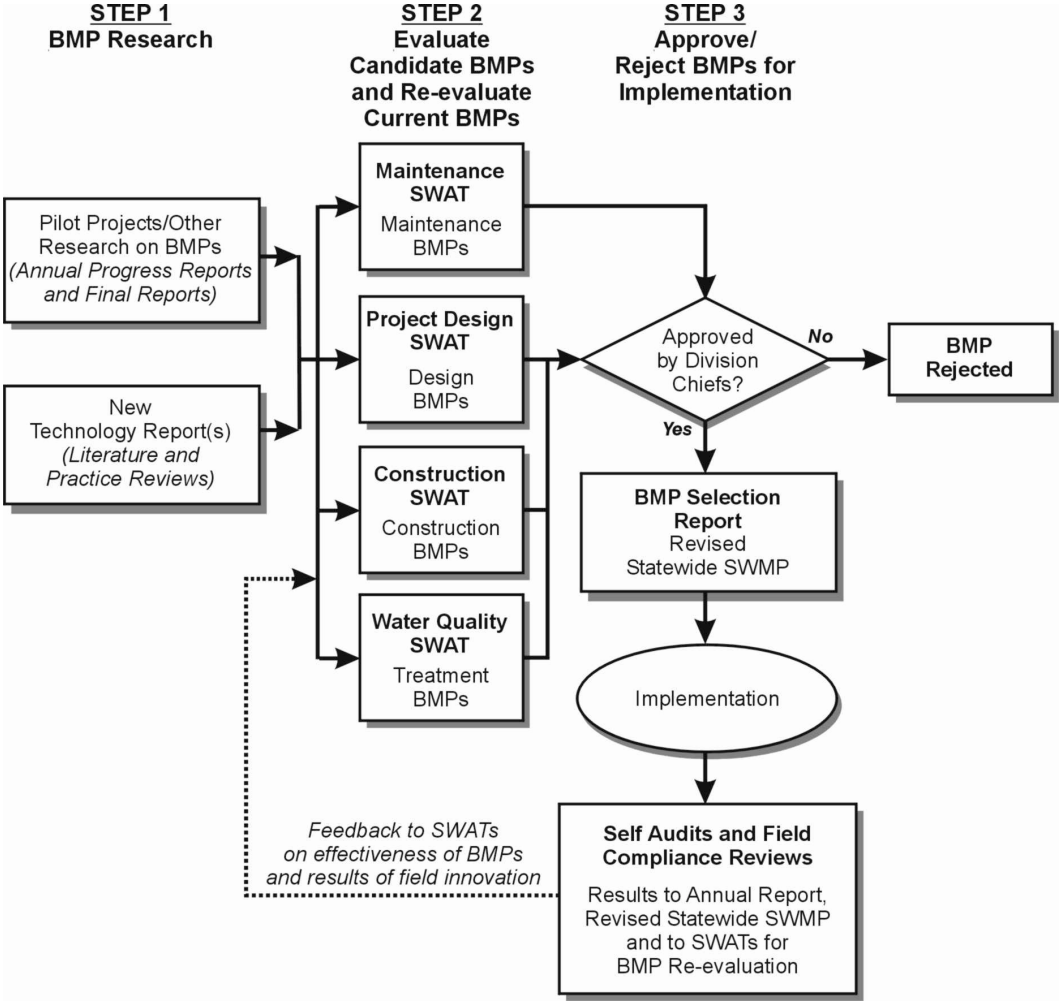

Figure 3-1
BMP Identification, Evaluation and Approval Process

The components of the BMP identification, evaluation and approval process are described in the following subsections. An important part of this process is the re-evaluation and improvement of existing approved BMPs. This re-evaluation process will be a primary responsibility of the SWATs, using feedback from Self-Audits, Field Compliance Reviews, and the Monitoring and Research Program (discussed in Sections 7 and 8).

3.3.2 BMP Identification, Evaluation and Approval Process

The BMP identification, evaluation and approval process consists of the following steps:

- Step 1 – BMP Research;
- Step 2 – Evaluation of Candidate BMPs (Including Re-Evaluation of Current BMPs); and
- Step 3 – Approval of BMPs for implementation, as appropriate.

These steps are described in the following paragraphs.

3.3.2.1 Step 1 – BMP Research

Potential new BMPs not currently used by the Department on a statewide basis will be described in the annual New Technology Report(s). These reports will consolidate information about practices and research by others. Pilot studies and other research conducted through the Monitoring and Research Program (Section 7) directly evaluating the effectiveness of new and existing BMPs is ongoing. The progress of this research will be reported in the Annual Report (Storm Water Treatment Technology Research Status Report). These reports, along with all reports from completed research, will be compiled and then forwarded to the SWATs for review and consideration.

3.3.2.2 Step 2 – Evaluation of Candidate BMPs (Including Re-Evaluation of Current BMPs)

As part of the general BMP evaluation process, function-based SWATs will evaluate the results of the Monitoring and Research Program and feedback from the Program Evaluation (Section 8) effort to identify opportunities for improving current BMPs (those that the Department is already using). This feedback will include information on BMP difficulties or inadequacies as well as improvements to the BMPs developed by field personnel. The ongoing Department self-assessment effort is described in more detail in Sections 7 and 8.

In addition to re-evaluating current BMPs, the SWATs will evaluate potential new BMPs drawn from the *New Technology Report* and other sources described in Step 1. The SWATs will use evaluation criteria appropriate for the BMP category (see Appendix B). As necessary, the Monitoring and Research Program will provide in-depth technical review of candidate BMPs through pilot projects or other applied research.

Within their assigned BMP categories, the SWATs have responsibility for recommending that a proposed or revised BMP be approved, proposed for field innovation, withheld for further research, or rejected.

BMPs that are judged by the SWATs to be promising but not yet ready for implementation will be referred to research. These would include BMPs for which effectiveness and/or reliability information is lacking or for which design or operational parameters are unavailable. These BMPs will be tested in a pilot program or subjected to other research prior to implementation. See Section 7 for more discussion of this effort.

3.3.2.3 Step 3 – Approval of BMPs for Implementation, as Appropriate

Headquarters Division Chiefs from Design, Construction, Maintenance, and Water Quality have the responsibility to evaluate and approve BMPs. The Division Chiefs can also reject a BMP based on either the initial evaluation of the BMP by the SWATs, or based on the results of field compliance reviews after an approved BMP has been implemented. Criteria that can be used to reject BMPs include relative effectiveness, technical feasibility, cost/benefit analysis, and legal or institutional constraints. It is acknowledged that previously rejected BMPs could subsequently be reconsidered through the process should evaluation factors change or new data become available.

BMP Selection Report: The results of the BMP identification, evaluation and approval process are described in detail in Appendix B. This information constitutes the BMP Selection Report required by the Permit.

3.3.3 Public Review of BMP Adoption Process

The Department will annually solicit comments from interested parties and the public during the process of identifying, evaluating and approving BMPs. The Department will announce and make available the draft Annual Report, including the revised Statewide SWMP, which will include the BMP adoption analysis. Specific procedures are as outlined in Section 9.2.3.

3.4 BMP IMPLEMENTATION

The Design Project Engineer, the Construction Resident Engineer and the Maintenance Supervisors will evaluate, on a site-by-site basis, when and where to deploy the BMPs based on the selection factors in the Guidelines. The Project Engineer and the Resident Engineer will implement BMPs in accordance with Section 4. The Maintenance Supervisors will implement BMPs in accordance with Section 5.

BMPs for treatment will be considered both for incorporation into transportation improvement projects (new construction and major reconstruction) and to retrofit existing storm drain systems. These BMPs will be selected and implemented by the Design Project Engineer in accordance with Section 4.4.

As stated in Section 1.4, this SWMP encourages the Department to use innovative approaches to implementing BMPs presented in the SWMP and implementing new BMPs not yet addressed in this SWMP. For approved treatment BMPs, the Districts are to review proposed changes with the Department's HQ prior to implementation.

4.1 OVERVIEW

This section describes how the Department complies with Permit requirements by incorporating storm water management into the Department's Project Development process. Within the Department, Project Delivery encompasses the activities of project planning, design and construction. Compliance will be accomplished by implementing the Project Development Storm Water Management Program described herein. This section is organized as follows:

- Section 4.2 describes the Project Delivery Storm Water Management Program responsibilities;
- Section 4.3 describes Design Pollution Prevention BMPs (Category IB);
- Section 4.4 describes Treatment BMPs (Category III).
- Section 4.5 describes Construction Site BMPs (Category II).
- Section 4.6 describes the Department's approach to illicit connections and illegal discharges on construction sites.
- Section 4.7 describes the Department's approach to address non-storm water discharges on construction sites.

Critical adjuncts to this section are Appendix B, which provides descriptions for the BMPs, and the Guidelines, which describe the implementation associated with each approved storm water management practice or BMP.

4.2 PROJECT DELIVERY STORM WATER MANAGEMENT PROGRAM RESPONSIBILITIES

4.2.1 Design Storm Water Management Program

The following positions within the Department are responsible for implementing the Design Storm Water Management Program within the Districts:

- **Design Division Chief:** The Design Division Chiefs are responsible for the implementation of the policies, procedures and personnel of the Design Program within their respective Districts. This includes ensuring compliance with all elements of the Statewide SWMP required to be implemented by the District Design Division.
- **Project Engineer:** The Project Engineer is responsible for the preparation of Project Study Reports and Project Reports during the "Project Approval/Environmental Documents" phase and PS&E documents (otherwise known as contract plans or bid documents) during the design phase. Where the re-use of soils that contain lead is proposed, the Project Engineer will ensure that written notification is provided to the RWQCB 30 days prior to advertisement for bids, as discussed in Section 4.3. The

Project Engineer determines whether a SWPPP or a WPCP is required for the construction project and incorporates appropriate permanent and temporary BMPs into the project.

When feasible, the Project Engineer incorporates treatment control practices into project plans and specifications. The Project Engineer may also include specific temporary control practices (including contaminated soil management BMPs) into the PS&Es. In addition, the Project Engineer is responsible for assembling information necessary to assist the Resident Engineer and contractor in preparing and reviewing the SWPPP/WPCP for inclusion in the Resident Engineer's pending file.

The District is responsible for ensuring that a Notice of Construction is submitted to the appropriate RWQCB at least 30 days prior to the start of construction for projects that require an SWPPP (projects disturbing 5 acres or greater). In addition, the District is responsible for ensuring that a Notice of Completion is submitted to the RWQCB upon completion of construction and stabilization of the site. These responsibilities may be carried out by the Design Division or the Construction Division, depending on the District.

4.2.2 Construction Storm Water Management Program

The following positions within the Department are responsible for implementing the Construction Storm Water Management Program within the Districts:

- **Construction Division Chief:** The Construction Divison Chiefs are responsible for the implementation of the policies, procedures, personnel and equipment of the District construction program within their respective Districts. This includes ensuring compliance with all elements of the Statewide SWMP required to be implemented by the District Construction Division.
- **Resident Engineer:** The RE is the Department's representative charged with administering construction contracts and responsible for ensuring that storm water controls are implemented on construction sites. The RE makes decisions regarding the acceptability of material furnished and work performed and exercises contractual authority to direct the contractor. The RE may impose sanctions if the contractor fails to take appropriate actions specified in the contract to correct deficiencies.

  The RE reviews and approves the WPCP or SWPPP and indicates to the contractor any required changes. The RE must approve the WPCP or SWPPP prior to the commencement of soil-disturbing activities. Amendments to the WPCP or SWPPP must also be approved by the RE. The RE periodically inspects the construction site for proper installation and maintenance of BMPs and overall implementation of the approved WPCP or SWPPP. The RE also ensures that the contractor is practicing self-monitoring as required in the contract. The RE is responsible for ensuring annual certification of compliance for projects that require a SWPPP is completed.

Additional duties of the RE include maintaining SWPPP or WPCP documentation; inspecting for, reporting, and, under certain circumstances, directing the cleanup and/or removal of illegally dumped material, spills or discharges through illicit connections within the limits of the construction site and forwarding noncompliance reports to the Construction Storm Water Coordinator.

- **Contractor:** The contractor is responsible for carrying out the contract per the plans, specifications and all applicable permits. The contract requires a contractor to develop and implement elements of the construction program subject to the review and approval of the RE. These activities include preparation, amendments and updates of the SWPPP/WPCP (subject to the approval of the RE), implementation of the SWPPP/WPCP, inspection and maintenance of contruction site BMPs, construction of permanent BMPs and completion of the annual certification for projects requiring an SWPPP.

4.3 DESIGN POLLUTION PREVENTION BMPs (CATEGORY IB)

4.3.1 Incorporation of Design BMPs into Projects

As discussed in Section 3, during the process of planning and design of all new facilities and reconstruction or expansion of existing facilities, the Project Engineer considers and, as appropriate, incorporates Design Pollution Prevention BMPs. These BMPs are standard technology-based, nontreatment controls selected to reduce pollutant discharges to the MEP requirements. The evaluation and approval of BMPs to be considered on a project-by-project basis statewide was accomplished through the process summarized in Section 3.2 (and defined in detail in Appendix B). Table 4-1 lists the Design Pollution Prevention BMPs that have been selected by the Department for project-specific consideration statewide. Detailed descriptions and guidance regarding implementation of these BMPs are provided in Appendix B and the Guidelines.

TABLE 4-1: DESIGN POLLUTION PREVENTION BMPs (MEP BASED) (CATEGORY IB)

Consideration of Downstream Effects Related to Potentially Increased Flow
Preservation of Existing Vegetation
Concentrated Flow Conveyance Systems
Ditches, Berms, Dikes and Swales
Overside Drains
Flared Culvert End Sections
Outlet Protection/Velocity Dissipation Devices
Slope/Surface Protection Systems
Vegetated Surfaces
Hard Surfaces

Project-specific BMP consideration is an iterative process that begins with initial project planning and scoping activities. As the project moves into detailed design, the Department revisits the BMP consideration process and detailed BMP selection and design commences together with detailed design of the highway and drainage facilities.

During the project delivery process, expected storm water run-on to the project site will be calculated and provided to the RE prior to construction so that appropriate control measures can be implemented to convey concentrated flows around or through the site in a nonerodible fashion. To determine run-on, the tributary drainage area will be examined and evaluated to determine the quantities and locations where run-on can be expected to enter the project area.

New construction may have an effect on downstream channel stability through changes in the rate and volume of runoff, the sediment load due to changes in the land surface, and other hydraulic changes from stream encroachments, crossings or realignment. The peak flow rate, runoff velocities, and erosive characteristics of the soils in the area will be assessed with regard to downstream watercourses to determine potential impacts.

During the design of both new and reconstructed facilities, the Department often incorporates additional surface paving as needed to enhance the operational safety and functionality of the facility. Total paved area and impervious surfaces should be kept to a practical minimum to reduce project costs and to reduce total and peak runoff discharges.

Where an increase in paved surfacing leads to an increase in either total or peak runoff discharges, a thorough evaluation is performed to determine if any adverse effects will result. If increased runoff will result in an increased potential for downstream effects in channels, the Department will consider the following:

- Modifications to channel (both natural and man-made) lining materials, including vegetation, geotextile mats, rock and rip-rap;
- Energy dissipation devices at culvert outlets;
- Smoothing the transition between culvert outlets/headwalls/wingwalls and channels to reduce turbulence and scour; and
- Incorporating retention or detention facilities to reduce peak discharges.

The Department will implement appropriate reasonable measures in an effort to ensure that runoff from the Department's facilities will not significantly increase downstream effects.

In new construction and reconstruction of facilities, the Department preserves existing vegetation during the construction of the project that is providing erosion and sediment control benefits to the maximum extent feasible. This is described in the Preservation of Existing Vegetation BMP presented in Section 3 of the Guidelines.

To maximize water quality benefits, the Department is committed to maximizing the use of vegetation. The Department shall accomplish this by:

- Preserving existing vegetation as appropriate;
- Incorporating vegetated areas such as Design Pollution Prevention BMPs; and
- Keeping total paved area and impervious ground cover to a practical minimum.

The Department also designs vegetative surfaces to address stabilization of completed slope/surface areas to prevent erosion from storm water and non-storm water runoff. In designing vegetative systems for these purposes, the Department's Design Program staff will conduct appropriate investigations to consider factors to provide a long-term sustainable environment for these vegetative systems. These factors may include soil type and condition; site topography; climate and season; types of native and adapted vegetation appropriate and suited to the site; and maintenance. This is described in the Vegetated Surfaces BMP presented in Section 3.3.4 of the Guidelines.

To help ensure that the Department is meeting its goals to incorporate Design Pollution Prevention BMPs into its projects, the Department will provide opportunities for comment from RWQCB staff. These opportunities shall include:

- Meetings with the RWQCB during the project design phase;
- Opportunities for RWQCB and SWRCB staff to attend Department training;
- A summary of the deployment of Design Pollution Prevention BMPs implemented within projects shall be included within the Annual Report; and
- Opportunities for the RWQCB to review Storm Water Data Reports. These reports document the incorporation of BMPs and are included in each project file.

Upon completion of the project, the Department's Division of Maintenance will assume responsibility and implement maintenance BMPs. Vegetation maintenance is discussed in Section 2.19 of the Guidelines.

Project and site conditions may allow implementation of enhanced permanent pollution prevention management practices that go beyond those set forth in Table 4-1, described in Appendix B and detailed in the Guidelines. The Department will continue to encourage experimentation and innovation on deploying such measures to minimize pollution. Feedback from the implementation of innovative measures is gathered for analysis and reporting in the Annual Report process including updating the SWMP and Guidelines as appropriate. Through feedback stemming from these enhanced efforts, the Department expects that the statewide permanent pollution prevention management practices identified herein will continue to evolve and improve in their effectiveness in managing the quality of discharges from the Department's facilities.

4.3.2 Alternative Highway and Storm Drainage Design Standards

Current highway and storm drainage design standards hinder or prohibit the Department from implementing some BMPs due to safety or access concerns. To address this, the Department will

conduct a research study (Appendix B.3.3) to investigate alternative highway and storm drainage design standards for new, major reconstruction and retrofit projects. Design alternatives considered in the study will address but not be limited to: (1) improving maintenance safety and access to clean storm drain inlets located in left lanes and medians (2) routing storm water runoff from areas that are not accessible to storm water BMPs, and (3) location and design of inlets to reduce concern of flooding associated with some BMPs. The Department will complete its study by **January 1, 2003,** and will submit a technical report of its findings, subject to the approval of the Executive Director of the SWRCB, in the **April 1, 2003,** Annual Report. Progress reports on the study are being submitted in each Annual Report until the final report is submitted.

4.3.3 Fueling Island and Activities

In 1997 the California Storm Water Quality Task Force created a work group that consisted of representatives from permitted municipalities and the petroleum industry to develop and publish guidelines that recommended BMPs for retail gasoline outlets. Some of the recommended BMPs involve structural or engineered changes to fueling islands. The Department evaluated the applicability of the structural and engineered BMPs in the guidelines and is developing appropriate design standards and specifications for future new or major reconstructed fueling islands at the Department's permanent maintenance facilities. When appropriate, the Department will consider retrofit opportunities for existing fueling islands. Progress on this review and development of standards will be reported in the Annual Report.

4.3.4 Re-use of Lead Contaminated Soils

The Department has applied for and received variances from the California Department of Toxic Substances Control (DTSC) for the reuse of some soils that contain lead. The Department will provide written notification to the RWQCB at least 30 days prior to advertisement for bids of projects that involve soils subject to this variance. This notification period will allow a determination by the RWQCB(s) of the need for development of Waste Discharge Requirements (WDRs) or written conditional approvals by RWQCB staff. When WDRs are necessary, the Department will submit the appropriate application forms and documents and will not implement any uses of lead contaminated soils, including stockpiling of such soils, until the WDRs are issued by the appropriate RWQCB. Where the re-use of soils that contain lead is proposed, appropriate contaminated soil management BMPs will be included in the PS&Es.

4.4 TREATMENT BMPs (CATEGORY III)

Where there is, or is proposed to be, a storm drain system discharging directly or indirectly to a surface water, the treatment BMPs listed in Table 4-2 will be considered. Once a BMP is approved for statewide use, it will be considered in all proposed new construction and major reconstruction projects. This applies to both improvement projects and existing discharges.

TABLE 4-2: APPROVED TREATMENT BMPs (CATEGORY III)

Biofiltration: Strips/Swales
Infiltration Basins
Detention Devices
Traction Sand Traps
Dry Weather Flow Diversion

Project-specific BMP consideration is an iterative process that begins with initial project planning and scoping activities. As the project moves into detailed design, the Department revisits the BMP consideration process and detailed BMP selection and design commences together with detailed design of the highway and drainage facilities.

The approved treatment BMPs listed in Table 4-2 are considered to be technically and fiscally feasible. The Department's experience has found these BMPs to be constructible, maintainable, and effective at removing pollutants to the maximum extent practicable.

To help ensure that the Department is meeting its goals to incorporate treatment BMPs into its projects, the Department will provide opportunities for comment from the RWQCB staff. These opportunities shall include:

- Meetings with the RWQCB during the project design phase;
- Opportunities for SWRCB and RWQCB staff to attend Department training;
- A summary of the deployment of treatment BMPs implemented within projects in the Annual Report; and
- Opportunities for RWQCB staff to review Storm Water Data Reports. These reports document the incorporation of BMPs and are included in each project file.

4.4.1 New Construction and Major Reconstruction Projects

For new construction and major reconstruction projects, the Department considers treatment BMPs by integrating the SWMP into the Department's existing project delivery process that begins with project feasibility studies and ends when construction is complete. At the present time, the Department has many projects in various phases of project delivery, and how the Department will implement treatment BMPs into new construction and major reconstruction program will vary depending on the phase of a project. The process by which the Department will implement treatment BMPs into the project delivery process is summarized in Table 4-3.

Except for categories C.1.a, D.1 and D.2 described in Table 4-3, the Department will notify the appropriate RWQCB during the planning or design stages of a new construction or major reconstruction project to provide RWQCB staff an opportunity to meet and discuss storm water quality issues and design pollution prevention and treatment BMPs for the proposed project.

Projects in Categories C.1.a, D.1 and D.2 described in Table 4-3 are projects that will be tagged as high priority retrofit projects. For these projects the Department will consult with the

RWQCB within 180 days after the completion of construction to discuss storm water quality issues and design pollution prevention and treatment BMPs for the proposed project.

For all categories of project delivery described in Table 4-3, the Department will:

- Maximize vegetation-covered soil areas of a project.
- Evaluate treatment BMPs that may be incorporated into a project. In this evaluation the Department at a minimum will:
  - Evaluate the potential impacts to downstream hydrology and aquatic life and habitat that could be caused by the project (can reference environmental documents if needed).
  - Evaluate and consider approved design pollution prevention BMPs for all projects determined to have the potential to cause downstream impacts.
  - Evaluate and consider approved treatment BMPs at each project based on site-by-site conditions.
  - Document the feasible treatment opportunities of each approved BMP for every project.
  - Incorporate the appropriate approved treatment BMPs into the project.

For all project categories described in Table 4-3, when the Department has rejected all of the five approved BMPs listed in Table 4-2 for a specific project, the Department will document its findings in a technical report submitted to the RWQCB:

- At a **minimum 180 days** prior to the start of construction for all project categories except categories C.1.a, D.1 and D.2
- **Within 90 days** subsequent to meeting with the RWQCB for project categories C.1.a, D.1 and D.2

During the Annual Report review process, the Department will evaluate the applicability of Categories B, C and D listed in Table 4-3 and revise or eliminate categories as appropriate.

As part of its Annual Report, the Department will provide a summary of the new construction and major reconstruction projects and high priority retrofit projects intiated during the reporting period that will include a description of the permanent and treatment BMPs implemented in the project.

TABLE 4-3: PHASES OF PROJECT DELIVERY FOR NEW CONSTRUCTION AND MAJOR RECONSTRUCTION PROJECTS

Category	Project Delivery Status	Process to Incorporate Approved Treatment BMPs	How Approved BMPs are Addressed and Funded
A	Beginning of Project Delivery Process prior to approval of the PSR	Storm water quality issues will be evaluated and treatment BMPs considered during the project alternatives and work plan development.	Cost of treatment BMPs will be programmed into the project.
B	PSR approved but Environmental Documents are not final	Treatment BMPs will be evaluated and where feasible incorporated into a project's design and addressed in the environmental documents.	Will incorporate BMPs and seek funding from the CTC. The Department will report to the SWRCB when the CTC has rejected the Department's request for funding.
C	Environmental documents final		
		1. Environmental documents are not reopened for any reason.	
		a. Treatment BMPs can be incorporated into project without needing the environmental documents to be reopened.	Will incorporate BMPs and seek funding from the CTC. The Department will report to the SWRCB when the CTC has rejected the Department's request for funding.
		b. Treatment BMPs cannot be incorporated into project without needing the environmental documents to be reopened.	Project will be tagged for high priority retrofit to incorporate BMPs. Will seek funding from the CTC. The Department will report to the SWRCB when the CTC has rejected the Department's request for funding.
		2. Environmental documents are reopened for some other reason other than storm water.	Notify RWQCB; follow process identified in Category B above.
D	Environmental documents final, design complete and project in the construction phase of project delivery		
		1. Project construction is not scheduled within 180 days (to be established with the Department).	
		a. Treatment BMPs can be incorporated into project without needing the environmental documents to be reopened.	Will incorporate BMPs and seek funding from the CTC. The Department will report to the SWRCB when the CTC has rejected the Department's request for funding.

TABLE 4-3: PHASES OF PROJECT DELIVERY FOR NEW CONSTRUCTION AND MAJOR RECONSTRUCTION PROJECTS

Category	Project Delivery Status	Process to Incorporate Approved Treatment BMPs	How Approved BMPs are Addressed and Funded
		b. Treatment BMPs cannot be incorporated into project without needing the environmental documents to be reopened.	Project will be tagged for high priority retrofit to incorporate treatment BMPs. Will seek funding from the CTC. The Department will report to the SWRCB when the CTC has rejected the Department's request for funding.
		2. Project scheduled for construction within 180 days.	Project will be tagged for high priority retrofit to incorporate treatment BMPs. Will seek funding from the CTC. The Department will report to the SWRCB when the CTC has rejected the Department's request for funding.

4.4.2 Retrofit Opportunities

Provision F.4 of the Permit requires that the Department shall seek opportunities to retrofit its storm water drainage system for water quality improvements for systems in urban areas subject to a MS4 permit whenever a section of the Department's right-of-way undergoes significant construction or reconstruction, and in other instances in which retrofit is recommended by the RWQCB. When considering projects for retrofit opportunities, the Department will:

- Undertake an inventory of all existing drainage pipe or collection ditch locations discharging into a receiving water or a downstream storm drain system owned by others in the area of the significant construction and reconstruction area;
- Consider impacts to stream hydrology and aquatic life and habitat resulting from the construction of and/or discharges from existing Department facilities;
- Determine the feasibility of design pollution prevention and approved treatment BMPs; and
- Request that the appropriate funding authorities consider allocating funds to install design pollution prevention or approved treatment BMPs when such BMPs are determined to be feasible.

A summary of the retrofit projects implemented by the Department during the reporting period will be reported in the Annual Report. The summary will include the site location, the date the project was completed, a description of the BMP(s) implemented, why the particular BMP was selected, and a brief description of the characteristics of the drainage area being served by the retrofit BMP(s).

Procedures for determining which treatment BMPs should be considered are described in Appendix B and Section 5 of the Guidelines. Guidance determining the volume of water to treat is presented in Appendix B and Section 5 of the Guidelines.

4.4.3 Infiltration Devices

The Department will adequately evaluate the potential impacts to groundwater quality that could be caused by implementing BMPs that result in runoff being ultimately discharged to groundwaters of the State, i.e., infiltration devices. To implement this, the Department will work cooperatively with the appropriate RWQCB and local agency to address groundwater quality concerns for each site being considered for groundwater infiltration devices. Infiltration devices will automatically be eliminated from further consideration in areas with known groundwater quality concerns or in areas where infiltration is prohibited by the RWQCB or local agency.

4.4.4 Vegetated Treatment BMPs

To maximize water quality benefits, the Department is committed to the use of vegetated treatment BMPs. For all new construction, major reconstruction, and retrofit projects, the Department shall accomplish this by:

- Incorporating vegetated strips and swales designed as treatment BMPs as appropriate; and
- Implementing operation and maintenance procedures established specifically for vegetated treatment BMPs (Section 5.5.1).

Design engineers shall use the Water Quality Practice Guidelines and other Department guidance documents to determine the appropriate use of vegetated treatment BMPs. Decisions regarding the incorporation of vegetation within each project shall be documented in the project Storm Water Data Report. The design engineers shall consult other functional units to ensure that safety and vegetation sustainability and maintenance issues are addressed. The Department shall provide opportunities for comment from RWQCB staff in accordance with Sections 4.3.1 and 4.4.

The Annual Report will provide a summary of the vegetated treatment BMPs implemented within projects during the reporting period. Reasons why vegetated treatment BMPs were not used are to be documented in the project files.

4.5 CONSTRUCTION SITE BMPS (CATEGORY II)

Table 4-4 is a matrix of the construction site BMPs (Category II) that the Department will implement, as appropriate, on construction sites. The temporary control practices are consistent with the BMPs and control practices required under the State of California NPDES General Permit for Storm Water Discharges Associated with Construction Activity, and are intended to

achieve compliance with the requirements of the Permit. The selected BMPs are directed at reducing pollutants in storm water discharges and eliminating non-storm water discharges. The selection of BMPs is accomplished through an evaluation process summarized in Section 3.2 and described in detail in Appendix B. Detailed descriptions and guidance regarding implementation of these BMPs are provided in Appendix B and the Guidelines. As described in Section 2.2.9, third parties conducting construction activities are required to implement BMPs comparable to those required of the Department.

At least 30 days prior to the start of construction, the Department will submit a Notice of Construction to the appropriate RWQCB for all construction projects that require an SWPPP to be prepared for the site. SWPPPs shall be prepared in accordance with the requirements set forth in the State of California NPDES General Permit for Storm Waters Discharges Associated With Construction Activity (General Permit). WPCPs must be prepared for all construction projects that do not require the preparation of an SWPPP. The SWPPP or WPCP shall be approved by the RE prior to commencement of soil-disturbing activities.

The Department implements storm water pollution management on construction sites year-round. The temporary control practices deployed on construction sites will be regularly inspected in accordance with Section 4.2 of the Guidelines, and improperly installed or damaged practices shall be corrected immediately, or by a later date and time, if requested by the Contractor and approved by the RE in writing, but not later than the onset of subsequent rain events.

For projects that require an SWPPP, the Department will submit a Notice of Completion to the appropriate RWQCB when construction is complete and when the construction site is stabilized. In accordance with the General Permit, a site is stabilized when a uniform vegetative cover with 70% of the native background vegetative coverage has been established or equivalent stabilization measures have been employed.

The individual BMPs designated by an "X" in Table 4-4 as being applicable to a particular typical construction activity, will not necessarily be appropriate for all projects involving the noted activity. For example, not all projects will have on-site vehicle fueling and maintenance operations; however, those that do will be required to conduct those operations in a manner consistent with the intent of the BMP description contained in Appendix B and BMP implementation detailed in the Guidelines.

Project and site conditions may allow implementation of enhanced temporary construction pollution management practices that go beyond those set forth in Table 4-4, described in Appendix B, and detailed in the Guidelines. The Department will continue to encourage experimentation and innovation on deploying such measures to minimize pollution. Information will be gathered from the use of innovative measures and analyzed and reported in the Annual Report process. Through feedback stemming from these enhanced efforts, the Department expects that the statewide temporary construction management practices identified herein will continue to evolve and improve in their effectiveness in managing the quality of storm water discharges from the Department's facilities.

TABLE 4-4: CONSTRUCTION SITE BMPs (CATEGORY II) FOR TYPICAL HIGHWAY CONSTRUCTION ACTIVITIES

	Typical Highway Construction Activities																												
	Demolish Pavement/Structures	Clear and Grub	Construct Access Roads	Grading (inc. cut and fill slopes)	Channel Excavation	Channel Paving	Trenching/ Underground Drainage	Underground Drainage Facility Installation	Drainage Inlet Modification	Utility Trenching	Utility Installation	Subgrade Preparation	Base Paving	AC Paving	Concrete Paving	Saw Cutting	Joint Sealing	Grind/Groove	Structure Excavation	Erect False work	Bridge/Structure Construction	Remove False work	Striping	Miscellaneous Concrete Work	Sound Walls/Retaining Walls	Planting and Irrigation	Contractor Activities	Treatment BMP Construction
Best Management Practices																													
Temporary Sediment Control																													
Silt Fence	X	X	X	X	X		X			X		X							X		X					X		X	
Sandbag Barrier	X	X	X	X	X		X			X		X							X		X					X		X	
Straw Bale Barrier	X	X	X	X	X		X			X		X							X		X					X		X	
Fiber Rolls	X	X	X	X	X		X			X											X					X		X	
Gravel Bag Berm	X	X	X	X	X		X			X											X					X		X	
Check Dam	X	X		X	X		X																					X	
Desilting Basin	X	X	X	X	X																X					X		X	
Sediment Trap	X	X	X	X	X		X			X		X							X		X					X		X	
Sediment Basin		X		X	X																X					X		X	
Temporary Soil Stabilization																													
Hydraulic Mulch	X	X		X	X																X					X		X	
Hydroseeding	X	X		X	X																X					X		X	
Soil Binders	X	X		X	X														X		X					X		X	
Straw Mulch	X	X	X	X	X		X	X		X		X							X		X					X		X	
Geotextiles, Mats/Plastic Covers and Erosion Control Blankets	X	X	X	X	X		X	X		X		X							X		X					X		X	
Scheduling	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
Preservation of Existing Vegetation		X	X	X			X	X		X									X	X		X			X				
Temporary Concentrated Flow Conveyance Controls																													
Earth Dikes/Drainage Swales & Lined Ditches		X	X	X																	X								
X=BMP may be applicable to activity																													

TABLE 4-4: CONSTRUCTION SITE BMPs (CATEGORY II) FOR TYPICAL HIGHWAY CONSTRUCTION ACTIVITIES

	Typical Highway Construction Activities																											
	Demolish Pavement/Structures	Clear and Grub	Construct Access Roads	Grading (inc. cut and fill slopes)	Channel Excavation	Channel Paving	Trenching/ Underground Drainage	Underground Drainage Facility Installation	Drainage Inlet Modification	Utility Trenching	Utility Installation	Subgrade Preparation	Base Paving	AC Paving	Concrete Paving	Saw Cutting	Joint Sealing	Grind/Groove	Structure Excavation	Erect False work	Bridge/Structure Construction	Remove False work	Striping	Miscellaneous Concrete Work	Sound Walls/Retaining Walls	Planting and Irrigation	Contractor Activities	Treatment BMP Construction
Best Management Practices (cont.)																												
Outlet Protection/Velocity Dissipation Devices		X	X	X																	X							
Slope Drains				X																	X							
Temporary Stream Crossing			X				X	X		X	X									X	X	X		X				
Clear Water Diversion	X		X		X	X														X	X	X			X			X
Wind Erosion Control		X	X	X	X		X			X		X	X	X	X												X		X
Sediment Tracking Control	X	X	X	X	X		X	X		X	X	X	X	X	X	X		X	X		X				X	X	X	X
Street Sweeping and Vacuuming	X	X	X	X	X		X	X		X	X	X	X	X	X	X		X	X		X				X	X	X	X
Stabilized Construction Roadway		X	X	X																								
Entrance/Outlet Tire Wash		X	X	X																						X	X	
Waste Management																												
Spill Prevention and Control	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Solid Waste Management	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hazardous Waste Management	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Contaminated Soil Management	X	X		X			X	X		X	X									X								
Concrete Waste Management	X		X			X		X			X		X		X	X		X	X		X			X	X	X	X	X
Sanitary/Septic Waste Management	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Liquid Waste Management														X		X	X		X		X		X				X	X
Materials Handling																												
Material Delivery and Storage	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Material Use	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TABLE 4-4: CONSTRUCTION SITE BMPs (CATEGORY II) FOR TYPICAL HIGHWAY CONSTRUCTION ACTIVITIES

	Typical Highway Construction Activities																												
	Demolish Pavement/Structures	Clear and Grub	Construct Access Roads	Grading (inc. cut and fill slopes)	Channel Excavation	Channel Paving	Trenching/ Underground Drainage	Underground Drainage Facility Installation	Drainage Inlet Modification	Utility Trenching	Utility Installation	Subgrade Preparation	Base Paving	AC Paving	Concrete Paving	Saw Cutting	Joint Sealing	Grind/Groove	Structure Excavation	Erect False work	Bridge/Structure Construction	Remove False work	Striping	Miscellaneous Concrete Work	Sound Walls/Retaining Walls	Planting and Irrigation	Contractor Activities	Treatment BMP Construction
Best Management Practices (cont'd)																													
Vehicle and Equipment Operations																													
Vehicle and Equipment Cleaning	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle and Equipment Fueling	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vehicle and Equipment Maintenance	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Paving Operations			X			X			X				X	X	X	X	X	X			X								
Stockpile Management	X		X					X		X	X		X	X	X			X											
Water Conservation Practices	X	X	X	X	X	X	X	X	X	X		X				X	X	X	X		X			X		X	X	X	
Potable Water/Irrigation																													
Dewatering Operations	X			X	X	X	X	X	X	X	X								X		X			X	X	X		X	
Illicit Connection/Illegal Discharge Detection and Reporting	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Storm Drain Inlet Protection*	X	X	X	X	X		X	X	X	X		X	X			X	X	X	X									X	X
Stabilized Construction Entrance/Exit *		X	X	X																						X			X

X **BMP may be applicable to activity**
***** **See Section B.4.3**

There will be instances where project and site conditions require deviation from the noted BMPs and the descriptions thereof in Appendix B and the implementation details of the Guidelines. However, the practices shown in Table 4-4, described in Appendix B, and detailed in the Guidelines are typical of those that will be implemented on a project-specific basis.

The Department's engineering staff has developed design criteria for basins that are sized appropriately to better accommodate linear construction projects. The size of the desilting basin is smaller than the detention basin design provided in the General Permit. Based on the Department's calculations, desilting basins will capture particles 0.02 mm in size and greater and some portion of the particles between 0.01 and 0.02 mm in size. Since this does not meet the General Permit requirement to capture particles 0.01 mm and greater, desilting basins will not be allowed as a "stand-alone" sediment control BMP on any project site. Only detention basins sized in accordance with the General Permit requirements will be allowed as stand-alone sediment control BMPs. The SWRCB and RWQCB staff has agreed to the desilting basin design criteria for use in projects where the General Permit design criteria cannot be accommodated subject to specific siting restrictions identified in the Guidelines. This is a new commitment and has not been incorporated into existing designs. In addition, the nature of linear projects and constrained rights-of-way inherent to the Department's work may preclude the use of desilting or detention basins of any size at some locations on certain projects and on some projects altogether. Implementation of desilting or detention basins will be considered on a project-specific basis. The Department is committed to refining the desilting and detention basin deployment criteria during the term of this Permit while implementing the desilting or detention basins on new projects where practicable.

Clean dirt removed from a construction site will remain the responsibility of the Department until it is disposed of or reused in a legal manner.

4.5.1 Construction Site BMPs

Within one (1) year of approval of this SWMP, the Department will revise the SWMP and Guidelines, subject to the approval of the Executive Director of the SWRCB, either to:

- Provide adequate justification to reject, limit or omit the use of level spreaders and stabilized construction entrances/exits for all construction sites, or
- Amend the list of approved BMPs to include them. Revisions to the SWMP may include appropriate criteria for the selection and implementation of approved BMPs.

In October 2001, the Department completed an effectiveness evaluation of level spreaders, which consisted of an extensive literature search, and a review of 40 Department construction sites. Based on the results of the evaluation, it has been concluded that the level spreader BMP does not lend itself to use as a temporary construction site BMP and should be rejected from further studies and inclusions in the Department's storm water program. Future studies may evaluate the use of level spreaders as a permanent BMP.

Stabilized entrance/exit BMPs are still being evaluated by the Department due to a limited number of rainfall events during the 2001/2002 rainy seasons. A report will be provided to the SWRCB prior to or with the April 2003 Annual Report.

4.5.2 Rainy Season

Appendix C of the SWMP and Section 4 of the Guidelines contain definitions of the rainy season for different areas of the State. These definitions are used in conjunction with Tables 4-3 and 4-4 of the Guidelines to determine the erosion and sediment control BMPs to be implemented at active and nonactive disturbed areas of construction sites during the rainy and nonrainy seasons, respectively.

The Department revised its definition of rainy season for the Lahontan RWQCB (Region 6) to ensure construction site BMPs are implemented during winter rain and snow storms and summer thunder and flash flood storms. The Department also revised Tables 4-2, 4-3 and 4-4 of the Guidelines to remove any definition of rainy season for areas of Regions 6 and 7 below 1,200 meters. For these areas:

- The Department will notify the Regional Board staff of construction projects in these areas at least 30-days prior to the start of construction.
- During the 30-day notification period, Regional Board staff may request to review the SWPPP or meet with the Department to discuss the project.
- If Board staff does not respond within the 30-day review period, then the Department can proceed with its construction activities.

The Board may still inspect the site and take enforcement, if necessary, pending inspection findings.

The notification format for these areas has been developed cooperatively between the Department, SWRCB and Regions 6 and 7 staff. The notification requires such items as expected start and stop dates, site location (including USGS coordinates), size of the construction contact name, etc. The SWPPP does not have to be submitted as part of the notification.

4.6 ILLICIT CONNECTION/ILLEGAL DISCHARGE

On construction sites, the RE and the Contractor shall be alert to and report the potential presence of illicit connections or illegal discharges. These situations will be addressed according to the BMP: Illicit Connection/Illegal Discharge Detection and Reporting BMP (see Section 4 in the Guidelines).

4.7 NON-STORM WATER DISCHARGES

4.7.1 Exempt and Conditionally Exempt Non-Storm Water Discharges

This section describes the Department's program for controlling pollutants from permitted non-storm water discharges stemming from construction sites. Previously described spill prevention, waste management and other practices will be implemented to ensure that these discharges remain uncontaminated.

Permitted non-storm water discharges include the following categories:

- **Discharges Authorized by a Separate NPDES Permit:** Since these discharges have a separate permit, they are not addressed by this Statewide SWMP.
- **Exempted Discharges:** These discharges have not been found to contain pollutants and can therefore be discharged without direct application of BMPs. (Previously described spill prevention, waste management and other practices will be implemented to ensure that these discharges remain uncontaminated.)

  These discharges include:

  - Flows from riparian habitats or wetlands;
  - Diverted stream flows;
  - Springs;
  - Rising groundwaters; and
  - Uncontaminated groundwater infiltration.
- **Conditionally Exempt Discharges:** The conditionally exempt discharges and their associated BMPs are identified in Table 4-5.

Groundwater dewatering is a common non-storm water discharge associated with construction activities. The nine RWQCBs throughout the State have different requirements for dewatering. Because of these requirements, dewatering discharges cannot be considered as an automatic conditionally exempt discharge through the Permit, but rather it may be conditionally exempt once the proposed discharge is reported, reviewed, and approved on a case-by-case basis by the appropriate RWQCB. The process the Department will follow to seek the approval of the RWQCB is provided in Figure 4-15 of the Guidelines. If approved by the appropriate RWQCB, the Department will implement the appropriate BMPs, including treatment if needed, to meet the conditions of the RWQCB and to ensure dewatering is not a source of pollutants in the storm drain system or surface water once it is discharged.

TABLE 4-5: NON-STORM WATER BMPs FOR CONDITIONALLY EXEMPT DISCHARGES

Non-Storm Water Discharges	BMP Titles
a. Uncontaminated pumped groundwater	Dewatering Operations[1]
b. Foundation drains	N/A[2]
c. Water from crawl space pumps	N/A[2]
d. Footing drains	N/A[2]
e. Air-conditioning condensate	N/A[3]
f. Irrigation water	Potable Water/Irrigation
g. Landscape irrigation	Potable Water/Irrigation [4]
h. Lawn or garden watering	Potable Water/Irrigation [4]
i. Planned and unplanned discharges from potable water sources	Potable Water/Irrigation [5]
j. Water line and hydrant flushing	Potable Water/Irrigation [5]
k. Individual residential car washing	N/A[6]
l. Discharges or flows from emergency fire fighting activities	N/A[7]

1. Prior to discharge, Caltrans will work directly with the appropriate RWQCB to determine the appropriate monitoring requirements, if needed, for the proposed discharge.
2. These discharges are not known to exist at the Department's facilities.
3. Air-conditioning condensate discharges are not expected to occur. Routinely, the Department's air-conditioning systems are so small that any such occurrences will evaporate prior to discharging to receiving waters.
4. Irrigation water, landscape irrigation and lawn or garden watering runoff, though minimized through the Potable Water/Irrigation BMP implemenation, occur on a regular basis as a result of excess irrigation water running off vegetated and nearby impervious areas and into storm drains. The preceding statement constitutes notice to the SWRCB and the RWQCBs of such occurrences statewide. The Department is currently conducting characterization studies that may find some irrigation and landscaping practices to be sources of pollutants. If found, BMPs will be implemented to eliminate or reduce the discharge of pollutants associated with irrigation so that such discharges will be conditionally approved under the Permit.
5. Activities by others that generate these discharges will require pollution management as specified in the Permit. Parties that undertake activities on the Department's property that have the potential to result in storm water discharges of this type will be required to notify the Department and the RWQCB in advance and to implement practices to appropriately manage pollutants.
6. Cleaning of residential cars is not an allowed activity on the Department's property. See the Vehicle and Equipment Cleaning BMP for cleaning of construction vehicles and equipment (not considered an exempt discharge).
7. The Department has no authority over these discharges. The Department will inform all federal, state and local fire officials of the discharge requirements of the Permit and refer them to the SWRCB for advice or assistance in how to achieve these expectations.

4.7.2 Nonpermitted Non-Storm Water Discharges

The Permit prohibits the discharge of all non-storm water discharges unless exempt or conditionally exempt. If an unauthorized non-storm water discharge occurs, the REs shall report the discharge to the District Construction Storm Water Coordinator within 12 hours of the discovery of such discharges. The District Construction Storm Water Coordinator shall report such discharges to the appropriate RWQCB in accordance with the noncompliance reporting procedures described in Section 9.

5.1 OVERVIEW

This section describes how the Department will comply with Permit requirements by incorporating storm water quality management into its maintenance activities. The Department will achieve compliance by implementing the Maintenance Storm Water Management Program described herein. This section is organized as follows:

- Section 5.2 provides an overview of the Maintenance Storm Water Management Program, which is the mechanism for incorporating maintenance BMPs into the Maintenance Program.
- Section 5.3 identifies maintenance BMPs for maintenance activities.
- Section 5.4 describes the program for non-storm water discharges.
- Section 5.5 describes how the Department maintains treatment BMPs.
- Section 5.6 describes how the Department develops Facility Pollution Prevention Plans for maintenance facilities and inspects facilities to ensure that BMPs are adequate and properly implemented.

5.2 IMPLEMENTATION OVERVIEW

The Headquarters Division of Maintenance and District Maintenance Divisions (referred to herein as Maintenance) are responsible for the care and upkeep of state highways. Maintenance performs activities that may impact storm water and receiving water quality. The Maintenance Storm Water Management Program is the component of the Statewide SWMP that describes:

- The program to implement maintenance BMPs (Category IA) as part of the ongoing maintenance activities for existing highways and highway-related properties, facilities and activities.
- The activities to manage potential storm water pollution from accidental spills, illicit connections, illegal discharges and illegal dumping within the Department's rights-of-way.
- Implementation of BMPs to reduce the potential for storm water pollution at maintenance facilities by minimizing contact between storm water and various materials and substances used and stored at maintenance facilities.

The following positions within the Department are responsible for implementing the Maintenance Storm Water Management Program within the Districts:

- **Maintenance District Division Chiefs:** Maintenance District Division Chiefs are responsible for the implementation of policies, procedures, personnel and equipment of the District Maintenance Storm Water Protection Program within their respective

Districts. This includes ensuring compliance with Statewide SWMP elements required to be implemented by the District Maintenance Division.

- **Maintenance Managers:** Maintenance Managers direct maintenance activities within regions or programs of the District. Each region is subdivided into maintenance areas. Maintenance Managers provide direct supervision to Maintenance Superintendents within their region or program.
- **Maintenance Superintendents:** Superintendents direct maintenance activities and provide direction to Maintenance Supervisors. Superintendents are responsible for ensuring maintenance BMPs are implemented in their jurisdictions.
- **Maintenance Supervisors:** Maintenance Supervisors are responsible for direct supervision of a maintenance crew. Supervisors provide on-the-job training for specific crew assignments, including compliance with water quality protection requirements. Specific crew assignments are covered prior to the start of scheduled maintenance activities. Supervisors have on-site responsibility for BMP implementation.

5.3 MAINTENANCE BMPs

The Department has developed guidance that addresses the implementation of storm water BMPs during highway maintenance activities and activities conducted at maintenance facilities. The Category IA BMPs to be implemented are technology-based controls to attain MEP pollutant control, as described in Section 3.2. Circumstances under which Category III BMPs would be implemented are also described in Section 3.3.

Table 5-1 identifies the approved BMPs that are applicable to activities and operations on highways and at maintenance facilities. General BMPs that apply to a majority of the Department's activities are identified for individual activities in the table. Detailed descriptions and guidance regarding implementation of specific BMPs are provided in Appendix B and Section 2 of the Guidelines.

The BMPs are grouped into "families" based on crew assignments (e.g., if a roadway crew plans to conduct asphalt work, a Maintenance Supervisor would refer to BMPs in Table 5-1 under the "A Family" heading "Flexible Pavement"). Maintenance Supervisors are responsible for ensuring that the personnel under their direct supervision are implementing the BMPs.

Facility and/or site conditions may allow implementation of enhanced BMPs that go beyond those set forth in Table 5-1, described in Appendix B and detailed in the Guidelines. The Department will continue to encourage experimentation and innovation on deploying enhanced BMPs to minimize pollution. Feedback from the implementation of innovative measures is gathered for analysis and reporting in the Annual Report process. Through feedback stemming from implementation of enhanced BMPs, the Department expects that the statewide maintenance management practices identified herein will continue to evolve and improve in their effectiveness in managing the quality of storm water discharges for the Department's facilities.

TABLE 5-1: MAINTENANCE BMPs

Scheduling and Planning
Sediment Control
Silt Fence
Sandbag or Gravel Bag Barrier
Straw Bale Barrier
Fiber Rolls
Check Dam
Concentrated Flow Conveyance Controls
Overside/Slope Drains
Ditches, Berms, Dikes, and Swales
Temporary Diversion Ditches
Soil Stabilization
Compaction
Wood Mulch
Hydraulic Mulch
Hydroseeding/Handseeding
Straw Mulch
Clear-water Diversion
Work in a Water Body
Sediment Tracking Control
Tire Inspection and Sediment Removal
Waste Management
Spill Prevention and Control
Solid Waste Management
Hazardous Waste Management
Contaminated Soil Management
Sanitary/Septic Waste Management
Liquid Waste Management
Concrete Waste Management
Materials Handling
Material Delivery and Storage
Material Use
Vehicle and Equipment Operations
Vehicle and Equipment Fueling
Vehicle and Equipment Maintenance
Paving Operations Procedures
Water Conservation Practices
Potable Water/Irrigation
Safer Alternative Products
Drainage Facilities
Baseline Storm Water Drainage Facilities Inspection and Cleaning
Enhanced Storm Drain Inlet Inspection and Cleaning Program
Illicit Connection Detection, Reporting, and Removal
Illegal Spill Discharge Control
Litter and Debris
Litter and Debris
Anti-Litter Signs

TABLE 5-1: MAINTENANCE BMPs

Chemical Vegetation Control
Vegetated Slope Inspection
Snow Removal and De-Icing Agents
Dewatering Operations (Temporary Pumping Operations)
Sweeping and Vacuuming
Maintenance Facility Housekeeping Practices

Appendix B describes how these BMPs were selected using criteria designed to comply with the technology-based requirements. As technology advances and more experience is gained with existing BMPs, the Department will periodically reevaluate existing BMPs and identify new BMPs that meet the standard of MEP for pollutant removal, as described in Section 3.2.

The Guidelines include a series of tables that describe activities and subtasks within each activity that are or could be sources of pollutants in storm water runoff; the tables also identify the pollutants of concern associated with each activity and subtask. The descriptions include the use of non-storm waters and the types of materials and wastes generated. For each activity and subtask described, the tables identify BMP(s) to be implemented to eliminate or reduce either the source of pollutants or the pollutants in runoff. The Guidelines provide detailed implementation requirements for each BMP by activity and subtask.

The objective of implementing maintenance BMPs is to provide preventative measures to ensure that maintenance activities are conducted in a manner that reduces the amount of pollutants discharged to surface waters via the Department's storm water drainage systems. The Department's maintenance activities involve the use of a variety of products. Under normal, intended conditions of use, these materials are not considered "pollutants of concern." However, if these products are used, stored, spilled or disposed of in a way that may cause them to contact storm water or enter storm water drainage systems, they may become a concern for water quality.

Potential pollutants of concern for the Department's maintenance activities include petroleum products, sediments, trash and debris, metals, acidic/basic materials, nutrients, solvents, waste paint, herbicides, pesticides, and others. Many of these potential pollutants can be prevented from being discharged via storm water drainage systems by selecting and implementing BMPs appropriate for the activity and subtask being conducted.

The majority of maintenance activities are performed in dry weather to minimize impacts to water quality; however, conditions may exist which require some activities be conducted during wet weather.

5.3.1 A Family (Flexible Pavement) and B Family (Rigid Pavement)

The general objectives of flexible and rigid pavement maintenance activities are to provide public safety, protect personal property, preserve the state's capital investment, and to maintain a riding quality satisfactory to the traveling public. Road surface maintenance typically involves

the use of concrete, asphalt and other materials to repair existing road surfaces. Potential pollutant sources, potential pollutants and approved BMPs for paving activities are identified in Appendix B of the Statewide SWMP and Section 2 of the Guidelines.

5.3.2 C Family (Slopes/Drainage/Vegetation)

The maintenance activities related to slopes, drainage and vegetation (C Family) typically include repair, replacement and clearing of channels, ditches, culverts, underdrains, horizontal drains and other elements of storm water drainage systems. Protective measures such as soil stabilization using vegetation or rock on stream banks, benches or ditches are also part of the C Family maintenance activities.

5.3.2.1 Baseline Storm Water Drainage Facilities Inspection and Cleaning Program

Maintenance Supervisors are responsible for inspecting storm water drainage systems and assess the need for cleaning or clearing. The Department should observe culverts and drain inlets annually in the fall and throughout the winter as needed to determine if cleaning or repairs are required. Culverts will be cleaned when sediment impairs culvert function. Ditches will be cleaned prior to the rainy season to maintain the hydraulic capacity of the ditch. Ditches and gutters will be sealed or repaired when structural integrity is endangered. Downdrains will be inspected annually and cleaned or repaired as necessary. Solid and liquid wastes generated by the cleaning of storm water drainage system facilities are disposed of in accordance with federal, state and local liquid and solid waste disposal regulations. Baseline inspection and cleaning activities will be reported annually by section of highway. This information will be used as a tool to evaluate the program.

Currently, the storm drains are maintained only to ensure hydraulic capacity. The Department is working cooperatively with the SWRCB to develop and implement an appropriate measure to determine when systems are to be cleaned based on pollutant reduction. The work being conducted through the Enhanced Storm Drain Inlet Inspection and Cleaning Program will aid in this determination.

5.3.2.2 Enhanced Storm Drain Inlet Inspection and Cleaning Program

Research to date has not demonstrated drain inlet cleaning to be effective in reducing the concentrations of pollutants typically measured in water columns, such as metals. Research is currently underway to investigate the benefits of drain inlet cleaning in reducing gross pollutants, such as litter and debris.

Litter is a high priority pollutant in some receiving waters within the State and is a pollutant listed on the CWA Section 303(d) lists for receiving waters in Southern California. The Department will implement an annual drain inlet inspection and cleaning program in metropolitan areas along the South Coast (San Diego, Orange, Los Angeles, and Ventura Counties). Due to employee safety, this program will not address left shoulders and median and ramp inlets that would require lane closures. Addressing these inlets results in unacceptable

traffic congestion and delays and unacceptable exposure of workers to traffic hazards. The Department will focus this program on inlets that can be safely accessed without substantial traffic interruptions. This includes right shoulder inlets and other inlets that do not require lane closures. If, after implementing the program, it is determined the drain inlets excluded are found to be significant sources of litter and debris, the Department will work with the SWRCB and RWQCBs to determine an effective method to address discharges of trash and debris from these inlets.

In the metropolitan portions of Los Angeles, San Diego, Orange and Ventura Counties, the storm drain inlets will be inspected and cleaned annually prior to the rainy season. Those storm drain inlets that contain 12 inches or more of accumulated material will be cleaned. Inspection and cleaning activities will be reported annually by section of highway. This information will be used as a tool to evaluate the program.

The Department's District 7 is conducting the enhanced storm drain inlet-cleaning program in accordance with a court order. Nothing in this SWMP will conflict with or result in the Department not complying with the stipulations of the court order. To address safety and access issues relating to the maintenance of the Department's facilities and systems, a research study will be conducted (Appendix B.3.3) to investigate alternative highway and drainage system design to eliminate or reduce the maintenance issues. This Section of the SWMP will be revised accordingly as a result of the study. Implementation of new design standards that may result from the study will be incorporated through Section 4.3.2. As further information is available from the continuing research efforts, this program will be re-evaluated with the SWRCB.

5.3.2.3 Illicit Connection/Illegal Discharge

When IC/IDs are discovered, they will be referred to the District Maintenance or NPDES Storm Water Coordinator for initial investigation and reporting. Illegal dumping that may impact storm water quality will be removed. All cleanup activities will also be reported to the District Maintenance Storm Water Coordinator, as well as all illegal-dumping incidents found but not cleaned. (Headquarters Maintenance developed a reporting format for IC/ID by January 2002 [see Section 9.2.10]).

5.3.3 D Family (Litter/Debris/Graffiti)

Traffic causes loose material on the roadbed to concentrate along curbs, dikes, gutters, paved medians, interchange ramps, bridge decks and street intersections. The Department conducts roadbed and roadside cleanup operations to provide safe highway conditions and to maintain a neat and clean appearance appropriate for the type and use of the road. Litter and debris removal activities include sweeping of shoulders, paved medians, etc., and litter removal along the roadsides. Graffiti is the defacing of facilities, most commonly with paint, and also by markers and stickers. The Department routinely removes graffiti from concrete structures, road signs, sound walls, steel bridge beams and other facilities, such as buildings and roadside rest area restrooms. The most common graffiti removal practice is to paint over the area. Other techniques that could be used, depending on the extent and nature of the graffiti, are

Water/Hydro-Pressure/Sand/Soda Blasting, Safe Chemical/Solvent Removal and Glass Polishing.

5.3.4 E Family (Landscaping)

The Department maintains vegetation on roadsides that is compatible with the surrounding environment, safe highway use, aesthetics, erosion and dust control. However, some vegetation must be controlled to reduce the risk of roadside fires, to maintain sight distance, to provide safety and to discourage noxious weeds.

Activities conducted under the Vegetation Control Program include chemical weed control, mechanical weed control, tree and shrub pruning and tree and shrub removal. Removal of vegetation is generally restricted to a narrow band adjacent to shoulder edges, which is necessary to provide sight distance and protect highway appurtenances, such as guardrails and signs. Vegetation management practices are designed to control vegetation while minimizing soil erosion.

By court order, the Department's District 7 is conducting an erosion control pilot study to address the need to remove a narrow band of vegetation along the shoulder of a road. Results from this study will be evaluated and provided in the Annual Report. The results of the study may change the Department's practices in other areas of the State.

The Department's vegetation control program is based on integrated pest management principles, including the use of physical, chemical and biological methods. To implement the vegetation control program, each District prepares a vegetation management plan. These plans are developed to address the Department's need to eradicate noxious and invasive weeds and maintain fire control strips. In accordance with Provision I.b. of the Permit, the vegetation control plans are to include the following minimum elements:

- Enhance the use of appropriate native and adapted vegetation throughout all the Department's rights-of-way for the purpose of preventing erosion and removing pollutants in storm water and nonstorm water runoff.
- Apply herbicides in a manner that minimizes or eliminates the discharge of herbicides to receiving waters. Factors to be considered include timing in relation to expected precipitation events, proximity to water bodies, and the effects of using combinations of chemicals.
- Restrict the application of nutrients to rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface water.

As part of its Vegetation Control Program, the Department has a goal to reduce herbicide and pesticide usage. To meet this goal, each District's vegetation management plan includes an herbicide use plan that includes the following measures:

- Factors considered in developing a plan for herbicide use include timing in relation to expected precipitation events, proximity to water bodies, and the effects of using combinations of chemicals.
- Chemical control activities are performed in compliance with federal, state and local pesticide use regulations.
- Activities are overseen by a licensed pest control adviser.
- Districts complete chemical use report forms. These forms record the date, locations, chemicals, amount used, purpose, weather, wind direction and other pertinent information.

Each Department District will submit its proposed vegetation control program that includes its herbicide use plan to the RWQCBs by May 15 of each year. The Annual Report will summarize the Department's chemical use report forms to demonstrate the quantity of herbicides used during the previous reporting period, by type of herbicide, by District, and by month. The summary format will be developed cooperatively between the Department and the SWRCB and will provide a mechanism through which the Department can demonstrate its reduction of chemical use for vegetation control.

The Department also established a program to periodically inspect roadside vegetated slopes to determine the need for remedial measures. These inspections are conducted along all roadsides at least once during an established 5-year schedule. Roadsides found to be of significant concern will be inspected on a more frequent basis depending on site conditions. Recommendations will be developed for site-specific remedial measures on vegetated slopes to maintain soil stability. Remedial measures may include reconstruction of vegetative soil stabilization systems. A summary of the inspections conducted by District and a summary of the findings and actions taken as a result of the inspections is to be submitted with the Annual Report.

The program to periodically inspect roadside vegetated slopes and determine the need for remedial measures is being implemented by the Maintenance Inspection and Slope Stabilization Team (MISST).

The MISST presently has approximately 40 active members representing all twelve Department Districts and Headquarters. The team consists primarily of maintenance managers, superintendents, supervisors, landscape specialists, maintenance storm water coordinators, lead workers, and other maintenance personnel. The team is also supported by four landscape architects, two environmental staff, and three transportation engineers that work for or directly with Maintenance.

The MISST has developed and field tested a working copy of the slope inspection form and will begin program implementation. The slope inspection form may be further adjusted during initial program implementation if necessary. The form includes a weighted point system and is designed to identify the severity and complexity of the slope erosion problem.

The MISST will use the slope inspection form to inspect approximately 20% of the slopes in each District annually, based on shoulder miles and the complexity of slope problems. Relatively minor, inexpensive slope problems can be corrected by Maintenance crews. When complex slope problems are identified, a District multi-disciplinary roadside review team will consider solutions and recommend programming for slope repair projects.

5.3.5 F Family (Environmental)

The F Family maintains permanent treatment BMPs. The F Family also implements procedures for detecting, tracking and reporting illicit connections and associated discharges into the Department's storm water drainage system. BMPs related to maintenance field activities and facility activities have been grouped together in the F Family designation. This separate designation has been instituted for proper charging practices and tracking purposes.

5.3.6 H Family (Bridges)

Bridge maintenance activities include:

- Repairing damage or deterioration in various bridge components;
- Removing debris and drift from piers;
- Repairing expansion joints, bearing seats, and abutments;
- Cleaning and painting structural steel; and
- Sealing concrete surfaces.

Also included are the maintenance of electrical and mechanical equipment on moveable-span bridges and the operation of the moveable spans. Potential pollutant sources, potential pollutants and approved BMPs for bridge maintenance are identified in Appendix B and in Section 2 of the Guidelines.

5.3.7 J Family (Other Structures)

The J Family of activities includes maintenance and repair of pumping plants and tunnels. Potential pollutant sources, potential pollutants and approved BMPs for these activities are identified in Appendix B and in Section 2 of the Guidelines.

5.3.8 K Family (Electrical)

The K Family of activities include all work performed on highway facilities used for control of traffic with traffic signal systems, highway and sign lighting systems, toll bridge electrical systems, irrigation controllers and other related systems. Potential pollutant sources, potential pollutants and approved BMPs for these activities are identified in Appendix B and in Section 2 of the Guidelines.

5.3.9 M Family (Traffic Guidance)

The M Family of activities covers all work to replace and maintain roadway delineation and pavement markings. Typical work includes refurbishing, delineation and replacement of missing markers. Potential pollutant sources, potential pollutants and approved BMPs for these activities are identified in Appendix B and in Section 2 of the Guidelines.

5.3.10 R Family (Snow and Ice Control)

Snow removal and ice control include snow removal operations and opening of drainage inlets that get covered or blocked by snow and ice. Because salt, deicing chemicals and abrasives may pollute storm water runoff, the Department uses no more than the minimum amount of these materials necessary for effective snow and ice control. The minimum amount of salt will be applied at the most effective time, as determined by the snowstorm severity, duration and temperature.

The Department will continue to work cooperatively with RWQCB offices in the snowy areas of the State to evaluate and develop selection criteria for de-icing agents. These types of materials may have significant adverse impacts on receiving waters.

5.3.11 S Family (Storm Maintenance)

The purpose of the S Family of activities is to provide temporary road openings and related maintenance to keep damaged facilities operational following major damage caused by storms, earthquakes, slides, flooding and other major disasters. Potential pollutant sources, potential pollutants and approved BMPs for these activities are identified in Appendix B and in Section 2 of the Guidelines.

5.3.12 T Family (Management and Support)

The T Family of activities includes the following:

- Storage, repair, and maintenance of vehicles, equipment and related support materials;
- Fueling and washing of vehicles and equipment;
- Maintenance of buildings, storm water drainage systems and landscaping;
- Storage of sand, salt, asphalt, rock and pesticides;
- Storage of self-generated wastes; and
- Bulk storage of sediment, litter and debris collected by road maintenance activities.

The Department currently implements practices to reduce the potential for storm water pollution by minimizing contact between storm water and the various activities conducted at the site and substances used and stored at the maintenance facilities.

In 1997 a workgroup of the California Water Quality Task Force worked cooperatively with representatives of municipalities and retail gasoline outlets to develop and publish guidelines and recommended BMPs for controlling pollutants associated with retail gasoline outlets. The Department has evaluated the maintenance-related BMPs in the Task Force guidelines and adapted them for use by the Department (see Appendix B Section B.2.2 and Section 2 of the Guidelines).

5.4 NON-STORM WATER DISCHARGES

5.4.1 California Department of Transportation Maintenance Activities

The Permit prohibits the discharge of nonpermitted non-storm water discharges. Maintenance personnel:

- Determine where the flow of a leak, spill or other runoff will travel;
- Identify drain inlets and watercourses, both upstream and downstream of the work site;
- Ensure that vehicles and equipment are clean and in good operating condition by conducting pre-operational inspections of vehicles and equipment;
- Set up work areas to minimize the tracking of material by vehicles and equipment in and out of the work area;
- Collect and properly dispose of wastes, materials removed as a result of equipment and system maintenance, and litter and debris;
- Secure lids on containers of liquids when not in use;
- Control the Department's spills promptly and transport collected materials back to a maintenance facility or approved storage site; and
- Have appropriate spill cleanup material on site and protect drainage systems and watercourses from spilled material.

Maintenance Supervisors will report facility and activity non-storm water discharges to their District Maintenance Storm Water Coordinators. The District Maintenance Storm Water Coordinators will coordinate the reporting of prohibited non-storm water discharges to the RWQCBs through the District Storm Water Coordinator (see Section 9.4).

The following activities have the potential to generate non-storm water discharges because they may use water in the process or may generate a liquid waste product:

- A2 Asphalt Paving;
- A3 Structural Pavement Failure (Digouts) Pavement Grinding And Paving;
- A5 Sealing Operations;

- B2 Mudjacking and Drilling;
- B3 Concrete Slab and Spall Repair;
- C1 Shoulder Grading;
- C2a Nonlandscaped Chemical Vegetation Control;
- C6 Drain and Culvert Maintenance;
- C9 Curb and Sidewalk Repair;
- D3 Sweeping Operations;
- D4 Litter and Debris Removal;
- D5 Emergency Response and Cleanup Practices;
- D6 Graffiti Removal;
- E1a Chemical Vegetation Control;
- E3a Irrigation Line Repairs;
- E3b Irrigation (Watering), Potable and Nonpotable;
- G1-3 Public Facilities;
- H7a Sand Blasting, Wet Blast with Sand Injection and Hydroblasting;
- H7b Painting;
- J2 Tube and Tunnel Maintenance and Repair;
- K6 Saw Cutting for Loop Installation;
- M1b Paint Striping and Marking;
- M3a Raised/Recessed Pavement Marker Application and Removal;
- M7 Median Barrier and Guard Rail Repair;
- M8 Emergency Vehicle Energy Attenuator Repair;
- T5b Building and Grounds Maintenance;
- T9a Vehicle and Equipment Fueling;
- T9b Vehicle and Equipment Cleaning;
- T9c Vehicle and Equipment Maintenance and Repair; and
- T9d Aboveground and Underground Tank Leak and Spill Control.

Storm water quality practices to control or prevent non-storm water discharges that may result from the activities listed above are described in the Guidelines for each BMP. As described in Section 5.2, Supervisors will review the BMPs with their crews to prevent or control non-storm water discharges.

5.4.2 Highway Spills

When spills of hazardous or nonhazardous materials occur on state highways, the agency with jurisdiction assumes authority as the incident commander. The Department's lead is in charge of the cleanup activity unless directed otherwise by the incident commander. All spilled materials are managed to protect public safety and the environment, including water quality. The Department coordinates with local health agencies and other local, state and federal agencies (e.g., Department of Fish and Game, Coast Guard, RWQCB, etc.) as appropriate to determine the approach and level of cleanup needed. Depending on the circumstances of the spill, this coordination is made directly or through the OES. The Department maintains a list of contractors available statewide to assist in cleaning up spilled materials if additional resources are needed.

5.4.3 Exempt and Conditionally Exempt Non-Storm Water Discharges

This section describes the Department's program for controlling pollutants from permitted non-storm water discharges from maintenance facilities or activities. Previously described spill prevention, waste management and other practices will be implemented to ensure that these discharges remain uncontaminated. These practices eliminate or reduce permitted non-storm water discharges and reduce water pollution from the Department's maintenance activities and operations via the Department's storm water drainage systems. Many of these practices are also required for personnel safety or by hazardous materials handling regulations.

Permitted non-storm water discharges through the Department's storm water drainage systems are divided into three categories:

- **Discharges authorized by a separate NPDES permit:** Since these discharges have a separate permit, they are not addressed by this Statewide SWMP.
- **Exempted discharges:** These discharges have not been found to contain pollutants and can therefore be discharged without direct application of BMPs.

  These discharges include:

  - Flows from riparian habitats or wetlands;
  - Diverted stream flows;
  - Springs;
  - Rising groundwaters; and
  - Uncontaminated groundwater infiltration.
- **Conditionally exempt discharges:** The conditionally exempt discharges associated with maintenance activities and their associated BMPs are identified in Table 5-2.

TABLE 5-2: NON-STORM WATER BMPs FOR CONDITIONALLY EXEMPT DISCHARGES

Non-Storm Water Discharges	BMP Titles
a. Uncontaminated pumped groundwater	N/A [1]
b. Foundation drains	N/A [2]
c. Water from crawl space pumps	N/A [2]
d. Footing drains	N/A [2]
e. Air conditioning condensate	N/A [3]
f. Irrigation water	Irrigation Potable (Watering) and Non-Potable (E3b) [4]
g. Landscape irrigation	Irrigation (Watering) Potable and Non-Potable (E3b) [4]
h. Lawn or garden watering	Irrigation (Watering) Potable and Non-Potable (E3b) [4]
i. Planned and unplanned discharges from potable water sources	Irrigation (Watering) Potable and Non-Potable (E3b) and Water Line Repairs (E3a) [5]
j. Water line and hydrant flushing	Water Line Repairs (E3a)[5]
k. Individual residential car washing	N/A[6]
l. Discharges or flows from emergency fire fighting activities	N/A[7]

BMP best management practice
NA not applicable

1. Prior to discharge, the Department will work directly with the appropriate RWQCB to determine the appropriate monitoring requirements, if needed, for the proposed discharge.
2. These discharges are not known to exist at the Department's buildings.
3. Air-conditioning condensate discharges are not expected to occur. Routinely, the Department's air-conditioning systems are so small that any such occurrences will evaporate prior to discharging to receiving waters.
4. Irrigation water, landscape irrigation and lawn or garden watering runoff, though minimized through BMP implementation, occur on a regular basis as a result of excess irrigation water running off vegetated and nearby impervious areas and into storm drains. The preceding statement constitutes notice to the SWRCB and the RWQCBs of such occurrences statewide. The Department is currently conducting characterization studies that may find some irrigation and landscaping practices to be sources of pollutants. If found, BMPs will be implemented to eliminate or reduce the discharge of pollutants associated with irrigation so that such discharges will be conditionally approved under the Permit.
5. Activities by others that generate these discharges will require pollution management as specified in the Permit. Parties that undertake activities on the Department's property that have the potential to result in storm water discharges of this type will be required to notify the Department and the RWQCB in advance and to implement practices to appropriately manage pollutants.
6. Cleaning of residential cars is not an allowed activity on the Department's facilities.
7. The Department has no authority over these discharges. The Department will inform all federal, state and local fire officials of the discharge requirements of the Permit and refer them to the SWRCB for advice or assistance in how to achieve these expectations.

5.4.4 Nonpermitted Non-Storm Water Discharges

Maintenance Supervisors will report all instances of nonpermitted non-storm water discharges to the District Maintenance Storm Water Coordinator in accordance with the procedures in Section 9.4.

5.5 MAINTENANCE OF TREATMENT BMPs

Treatment BMPs capture and remove pollutants from storm water before the runoff leaves the facility. After construction, such projects are normally turned over to Maintenance. For treatment BMPs, regular maintenance will allow the systems to continue to function as designed.

The Department has developed maintenance and inspection procedures that consider factors such as maintenance indicators, field measurements, frequency of field measurements, and specific maintenance activities for the treatment BMPs approved for deployment.

These maintenance and inspection procedure BMPs are described in the Guidelines.

5.5.1 Vegetated Treatment BMPs

The Maintenance Division shall follow its Guidance BMPs to mow grass-lined swales and strips, to remove trash and debris, and to repair vegetated areas. These guidance BMPs may be modified based on recommendations given in the Department's report on final siting and design criteria for vegetated strips and swales that will be provided to the SWRCB by August 15, 2003 (see Section B.5.3). Proposed modifications to operations and maintenance BMPs will be provided to the SWRCB by August 15, 2003. The Department shall allow 60 days for SWRCB review and approval by the Executive Director.

Chemical vegetative control measures will not be used on vegetated treatment BMPs except where the Department is directed by the California Department of Food and Agriculture to treat the BMPs for invasive weeds. The Department will report on the directed usage of chemical vegetative controls in its Annual Report.

5.6 MAINTENANCE FACILITY POLLUTION PREVENTION PLANS

Facility Pollution Prevention Plans (FPPP) has been developed for each maintenance facility owned or operated by the Department. The FPPPs describe the activities conducted at the facility and the BMPs to be implemented to reduce the discharge of pollutants in storm water runoff from these facilities. Supervisors inspect their maintenance facilities monthly to monitor the implementation and adequacy of the BMPs. A report that includes the date of the inspection, the name of the inspector, observations, and recommended corrective actions is prepared by the Supervisor. All inspection records will be maintained for a period of 3 years. Any observed instances of non-compliance will be reported to the District Maintenance Storm Water Coordinator.

District Maintenance Storm Water Coordinators are responsible for ensuring that Facility Pollution Prevention Plans (FPPPs) are developed for each maintenance facility. The FPPPs identify the work activities at each facility along with the corresponding BMPs that should be implemented.

In addition to monthly facility inspections conducted by the facility supervisor, the District Maintenance Storm Water Coordinators will review at least 20% of each District's facilities each year. These reviews will monitor each facility's documentation (e.g., FPPP, monthly inspection reports, etc.) and include a thorough yard inspection. Each District Maintenance Storm Water Coordinator will prepare a report including the date of the inspection, name(s) of the inspector, observations, and recommended corrective actions. All FPPP records will be maintained for a period of 3 years by the Maintenance Supervisor. Any observed instances of noncompliance will be reported in accordance with the procedures provided in Section 9.4.

In addition to inspections conducted by the facility supervisors and the Maintenance Storm Water Coordinators, maintenance facilities may be subject to additional compliance reviews under the Maintenance Compliance Monitoring Program identified in Section 8 of this SWMP (Section 8.4.2).

6.1 INTRODUCTION

This section describes how the Department will comply with Permit requirements by providing pertinent information regarding storm water quality management to its employees, construction contractors and the general public. The Department will accomplish compliance by implementing the Training and Public Education Program described herein. This section is organized as follows:

- Section 6.2 describes the storm water quality training program for the Department's employees.
- Section 6.3 describes outreach to construction contractors on storm water management.
- Section 6.4 describes the public education program.

6.2 EMPLOYEE TRAINING PROGRAM

The Department's policy and practice is to provide education and training to ensure that all of its employees have the knowledge and skills necessary to perform their functions effectively and efficiently.

The Department develops and presents employee-training programs with curricula and materials tailored to specific topics and personnel levels. These programs are evaluated and refined periodically to ensure the educational messages are both timely and effective.

The Department has provided a list and copies to the SWRCB of all the training material and curricula developed. A summary of all future training materials and curricula developed along with copies of documents relating to the training will be provided in the Annual Report.

Since the mid-1990s, the Department has developed and presented a variety of training programs focused on storm water quality. These programs are targeted to many groups (within the Department) and to employees at many levels of responsibility.

The purpose of the Employee Training Program is to teach appropriate Department employees about the following:

- Storm water characteristics and water quality issues;
- The roles and responsibilities of individuals, Districts, Divisions and Programs within the Department regarding implementation of the Statewide SWMP to achieve Permit compliance;
- Activities and practices conducted by Department employees that are or could be sources of storm water pollution and non-storm water discharges;

- BMPs to be implemented for activities or practices that are or could be sources of storm water pollution and BMPs to eliminate prohibited non-storm water discharges or BMPs to control exempt or conditionally exempt non-storm water discharges; and
- How to use the Guidelines or other manuals to select and implement BMPs.

The Department's strategy for training current and new employees consists of two parts, as follows:

- Developing and presenting focused training courses that are targeted to specific topics, specific groups within the Department, or specific levels of personnel. For example, the courses summarized in Section 6.2.1 have been developed and presented to employees from the Maintenance, Construction and Design functional groups.
- Developing training materials that are incorporated into routine training programs. This strategy is considered to have the highest long-term effectiveness because Department's employees learn to incorporate storm water quality thinking and pollution prevention practices into all aspects of their work.

The Department's District employees are classified into several functional groups. Table 6-1 identifies the functional groups that have storm water quality management responsibilities.

TABLE 6-1: THE DEPARTMENT'S FUNCTIONAL GROUPS

Functional Group	Area of Responsibility
Planning and Design	Responsible for development and implementation of BMPs through the project planning and design phase for construction projects.
Construction	Responsible for development and implementation of BMPs relating to construction projects from the award stage through completion.
Maintenance	Responsible for development and implementation of BMPs relating to the maintenance of highways and related facilities.

As part of the **Annual Report**, the Department will evaluate the training provided to its employees and contractors and assess its effectiveness. The Department will provide a summary of its evaluation, assessment and recommendations for revisions to its training program to ensure it is effective. Copies of the forms or documents used for the evaluation and assessment are to be provided in the Annual Report.

6.2.1 Storm Water Courses

Storm water training courses have been developed by the Water Quality Program in conjunction with the functional programs and provide a comprehensive review of storm water pollution

prevention concepts and practices. The curriculum focuses on storm water pollution prevention and consists of courses and other training activities. In addition, these courses provide an opportunity for staff to discuss issues with the Water Quality Program and others involved in the development of the Statewide SWMP. Course topics will be updated, as needed, to reflect modifications to the Department's storm water management program.

As course materials are developed and distributed, they are made available via the Department's Internet Web site:

http://www.dot.ca.gov/hq/env/stormwater/index.htm

A comprehensive introduction/refresher course and an annual update course focusing on revisions to the program have been developed for each of the functional activities identified below.

- **General Storm Water Management** is a course that covers all aspects of the Statewide SWMP and Guidelines to support the implementation of the storm water management program.
- **Storm Water Management for Planning and Design** is a course that presents the Statewide SWMP and how Planning and Design Division employees are to apply the Statewide SWMP during planning, design and construction of projects.
- **Storm Water Management Related to Construction Sites** is a course that provides an explanation of the sources of pollutants at construction sites, reviews the BMPs that are typically deployed at construction sites and ensures REs are aware of their responsibilities to implement the Construction Storm Water Management Program. REs are informed of contractor's contractual obligations and responsibilities in SWPPP and WPCP development and implementation.
- **Storm Water Management for Maintenance Activities** is a course that provides an explanation of the specific sources of pollutants associated with road surfaces maintenance activities and facilities that require BMPs to protect storm water, describe the BMPs developed to address those sources and ensure that Maintenance Supervisors are aware of their responsibilities to implement the Maintenance Storm Water Management Program.

Table 6-2 defines which Department employees are targeted for each storm water course.

TABLE 6-2: STORM WATER MANAGEMENT TRAINING COURSES

Course	Target Employees
General Storm Water Management	SWAT Members and District Storm Water Coordinators (see Section 2.2.7 and Section 2.2.8)
Storm Water Management for Planning and Design	Project Engineers from Design (see Section 2.2.8.1)
Storm Water Management Related to Construction Sites	REs from Construction (see Section 2.3.7.2)
Storm Water Management for Maintenance Activities	Maintenance Supervisors (see Section 2.2.8.3)

6.2.2 Training Course Frequency

The comprehensive introduction/refresher course will be attended by new targeted employees and other targeted employees that have not received training in the first year, and repeated by all targeted staff once every four years. To even out the number of training sessions, one fourth of the employees in need of refresher training will be trained every year. The annual update focusing on revisions to the statewide SWMP will be required for all targeted employees.

6.2.3 On-the-Job Training

To support implementation of the Statewide SWMP, the Department makes expert services available on an on-call status to provide on-the-job training to employees in the Design, Construction and Maintenance Divisions.

Also, meetings are regularly held at Headquarters and with District representatives to discuss storm water issues, management concepts and new or revised procedures and practices. Details are further discussed in Section 8.3.

6.2.4 Educational Reminders

The Department develops and provides storm water bulletins as educational reminders and regulatory updates for employees in the Design, Construction, and Maintenance Divisions. These bulletins are published approximately monthly and present insights and information about the practical application of BMPs in an easy-to-read format. The following bulletins are distributed within the Department and are also sent to regulatory agencies, construction contractors and citizen groups:

- **Project delivery bulletins** are designed for and distributed to Project Delivery Division employees. The bulletins discuss a variety of project delivery and design related storm water quality issues, including soil stabilization practices and design controls.
- **Construction bulletins** are designed for and distributed to Construction Division employees and contractors. The bulletins discuss a variety of construction-related storm water quality issues, including minimization of storm water pollution, erosion control, storm water protection during construction, vegetative buffer strips, construction over bodies of water, protection of stockpile materials, inspection requirements, SWPPP and WPCP preparation, dust control practices, and construction BMP application.
- **Maintenance bulletins** are designed for and distributed to Maintenance Division employees. The bulletins discuss a variety of maintenance-related storm water quality issues, including follow-up information on inspections, drainage system facilities inspections, temporary sediment controls, roadside storage of materials and wastes, snow and ice controls, vehicle and equipment fueling and maintenance, good housekeeping practices, and hazardous material management.

As these bulletins are developed and distributed, they are also made available to the general public via the Department's Internet Web site:

http://www.dot.ca.gov/hq/env/stormwater/index.htm

6.3 OUTREACH TO CONSTRUCTION CONTRACTORS

The Department provides outreach to construction contractors to raise their awareness and understanding of the problems and causes of storm water pollution and to explain their responsibilities. This outreach is done primarily through informational exchanges between the Department and its contractors. The informational exchanges cover the following topics:

- The provisions, conditions and requirements of the Permit that apply to their projects;
- The availability of guidance material prepared by the Department for construction contractors; and
- General responsibilities of construction contractors regarding implementation of the Statewide SWMP, the requirements of a SWPPP/WPCP, and how to prepare an SWPPP/WPCP.

6.3.1 Informational Exchange Sessions

The Department uses three types of informational exchange sessions to describe storm water pollution prevention concepts and practices and to explain techniques for preparing SWPPPs and WPCPs for construction activities.

- **Informational Exchange #1, Storm Water Permit Compliance Requirements, Pre-Bid Meeting:** Pre-bid meetings may be conducted to discuss a given upcoming construction project. The Project Engineer provides general information to construction contractors regarding the requirements in the Permit and the Statewide SWMP that apply to the subject project (i.e., the project on which the contractors are considering submitting bids). This information generally includes a discussion of the need for developing a project-specific SWPPP/WPCP.
- **Informational Exchange #2, Storm Water Permit Compliance Requirements, Pre-Construction Meeting:** The RE provides project-specific guidance to construction contractors on topics such as SWPPP/WPCP preparation, selection of BMPs, and BMP monitoring and inspection. The Department will also notify the appropriate RWQCB of the pre-construction meeting to allow an RWQCB representative to be at the meeting to review and discuss the water quality issues relating to the construction project.
- **Additional Informational Exchanges:** The RE will hold informal ad hoc sessions with contractors, as needed, during the course of most construction projects.

The topics covered in informational exchanges will be updated as needed to reflect modifications to the Department's storm water management program.

6.3.2 Outreach to Contractor Groups

The Department regularly works with the Association of General Contractors (AGC) and other contractor groups at their meetings and discusses issues related to storm water and implementation of the Department's storm water management program.

6.3.3 Informational Bulletins

The Department prepares and distributes informational bulletins in the form of topical bulletins to inform construction contractors of recent storm water quality developments and requirements for construction projects. The bulletins described in Section 6.2.4 are distributed to contractors either directly or by REs.

6.3.4 Future Training

The Department has developed and implemented a construction contractor training program to educate contractors about developing and implementing an SWPPP, the importance of complying with the SWPPP, inspection and reporting requirements, the role of the RWQCB in the SWPPP and construction project, and the consequences associated with not adequately implementing the SWPPP.

A summary of the training courses conducted during the reporting period will be provided in the Annual Report. The summary will include the date and location of training, number in attendance, a copy of the attendance sheet, and a copy of the agenda or course handouts. As part of the Annual Report, the Department will evaluate and assess the effectiveness of this training program. A summary of its assessment will be provided in the Annual Report along with any recommendations to revise the training, if necessary, to ensure it is effective.

6.4 PUBLIC EDUCATION PROGRAM

The Department currently uses a variety of methods to educate the public about the importance of managing storm water. The goals of the existing program are to:

- Inform the public regarding the storm water quality issues that pertain to the Department's properties, facilities and activities.
- Change public behavior regarding the release of potential pollutants (e.g., litter, spilled loads and oil leaks).

This outreach program consists of a variety of written materials, monthly and quarterly bulletins, a Web site expansion, workshops and the Department's Adopt-a-Highway Program, as described

below. The written materials are designed to appeal to the general public (in easy-to-read formats) while providing technical information on selected Department projects and activities.

Some Districts have undertaken cooperative public educational programs with local municipalities. These are described in more detail in the individual Regional Work Plans.

An expanded, statewide public education program will be considered, and implemented as directed by the SWRCB following completion of the research program outlined in Section 6.4.1.

The Department installs "No Dumping" and "Litter Fine" signs (see Litter and Debris and Anti-Litter Signs in Section 2 of the Guidelines) at selected locations on highways and freeways. Stenciled warnings prohibiting discharges to drain inlets at state-owned park-and-ride lots, rest areas, vista points and other areas with pedestrian traffic are also used to increase public awareness (see Storm Drain Stenciling in Section 2 of the Guidelines).

6.4.1 Public Education Research

The Department has initiated a public education research study to determine the effectiveness of public education in reducing highway litter. Litter was chosen as the focus of the study because it is seen by the Department as the major pollutant resulting from highways that has the greatest potential for reduction from the implementation of a public education program directed at users of the highway system.

During the first year of the study (winter of 00/01), baseline data on highway litter were collected. During years two and three of the study (Fiscal Years 01/02 and 02/03), methods will be developed and implemented to inform and educate the public on ways of reducing highway litter. The sites selected to be monitored are subject to the review and approval of the Executive Director of the SWRCB.

The results of the education will be determined by directly measuring the reduction of litter at designated litter monitoring sites monitored during the first year (winter of 00/01). In addition to measuring the reduction of litter due to public education, a public opinion survey will determine if the public has changed its behavior toward litter on highways.

The Fresno metropolitan area has been selected as the location for this research because this is seen as a definable area with a stable population that is not heavily influenced by outside sources like most major metropolitan areas in California. This will allow the public education methods to be focused and to gain an understanding of the best methods of educating the public.

6.4.2 Other Resources

The Department will investigate other state, federal, and local agency public outreach programs to evaluate partnering opportunities relating to storm water quality.

Results of the Department's investigations conducted and opportunities pursued or implemented during the reporting period will be provided in the Annual Report.

6.4.3 Informational Brochures

The Department periodically issues brochures covering many pertinent topics in storm water management and research. The brochures are distributed to the general public at public meetings, members of the legislature, members of the press, Department personnel, public agency personnel, and other interested parties throughout the state. The brochures are also available through the Web site discussed in Section 6.4.4. To date, the issued brochures include:

- **Storm Water Program Brochure:** Describes the Department's overall storm water program and how it is implemented to meet NPDES requirements.
- **Research and Monitoring Studies Brochure:** Describes all categories of storm water research and monitoring studies, both in progress and planned.
- **San Diego Water Quality Control Study Brochure:** Describes the major components of this BMP-based study underway in the Department's District 11 (San Diego).
- **Litter Management Brochure:** Describes the Department's Litter Management Program related to storm water quality and the Litter Management Pilot Study being conducted.
- **Compliance Brochure:** Describes permit compliance monitoring as carried out by the Department.
- **BMP Pilot Studies Brochures:** Briefly summarizes the BMP pilot retrofit projects being conducted in the Department's Districts 7 (Los Angeles) and 11 (San Diego).
- **BMP Pilot Studies Technical Brochure:** Describes the BMP pilot studies in more detail and includes technical retrofitting information and photos for each BMP site.
- **Soil Stabilization Brochure:** Describes erosion control and soil stabilization projects related to effectiveness, pilot studies and staff training.
- **Pathogens in Storm Drain Discharges Brochure:** Describes the urban watershed study in San Diego County for pathogens in storm drain discharges.
- **North Coast Studies Brochure:** Describes current herbicide and road crossing studies along the North Coast related to aquatic wildlife and habitat (in progress).
- **GIS/Database Projects Brochure:** Describes all current GIS projects and available databases, such as the BMP Pilot Study Database being developed (in progress).

A list of the informational brochures developed and distributed by the Department will be included in the Annual Report.

6.4.4 Web Site

An Internet Web site was created for the Department's Storm Water Management Program that is accessible through the Department's home page Web site. The Web site provides information on all storm water outreach activities, including brochures, bulletins and workshops as well as bulletins on related topics, information related to construction and maintenance activities, and links to key related sites.

The site address is: http://www.dot.ca.gov/hq/env/stormwater/index.htm

6.4.5 Adopt-A-Highway Program

The Department's "Adopt-A-Highway" program is an opportunity for volunteers to make a tangible contribution to community and roadside aesthetics and is a way to inform the public about the storm water problems related to illegal dumping of litter and debris. As part of this program, signs are posted along roadways acknowledging groups that have volunteered to plant wildflowers, trees and/or shrubs, collect litter or remove graffiti from structures. This program serves to demonstrate the local public's commitment to keeping highways clean and acts as a reminder to drivers and passengers who see the volunteers and the signs. A Department Adopt-a-Highway Program Brochure is available at http://adopt-a-highway.dot.ca.gov. This brochure describes the kind of highway adoption opportunities available and includes a permit application.

6.4.6 Storm Drain Stenciling

The Department currently stencils messages at storm drain inlets located at highway facilities such as park and ride lots, rest areas and vista points to assist in educating the public about storm water runoff pollution. The details of this maintenance BMP are included in Section 2.14 of the Guidelines. This program will be expanded to include stenciling of storm drains on The Department's roads and highways that traverse through cities, towns, and communities with populations 10,000 or more, or less if the area is covered by a MS4 permit. The Department may work in partnership with the local agency to implement this expanded element of the stenciling program.

By **January 1, 2005**, the Department will complete its stenciling program for all existing storm drain inlets described above. All new inlets in the areas described above will be stenciled when constructed. The stencils will be maintained by the Maintenance Department or through agreements with local agencies. Extending the due date to complete storm drain stenciling from January 1, 2003 to January 1, 2005, will ensure the Department is able to acquire sufficient resources to stencil all storm drains.

The Department will report the progress of its existing storm drain system stenciling program in the Annual Report. The progress report will identify the number and location of the drains stenciled and will report the number of drains stenciled by local agencies during the reporting period. The Department will also report the location and number of all newly constructed drains stenciled during the reporting period.

6.4.7 Technical Workshops

Periodically, the Department will host or co-host public workshops that focus on specific storm water topics. These workshops are for the purpose of discussing storm water topics currently being researched by the Department and others and offer the opportunity to share information and facilitate a collective focus on potential solutions to the challenges faced by municipal dischargers.

These workshops are held on an as-needed basis, but the expectation is that on average, two per year will be held.

7.1 OVERVIEW

This section describes the monitoring and research program developed by the Department to provide information on storm water pollutants, evaluate existing and potential BMPs, and meet monitoring and assessment requirements of the Permit. This information is used by the Department to evaluate the Statewide SWMP (see Section 8).

This section is organized as follows:

- Section 7.2 provides the background and objectives of the Monitoring and Research Program.
- Section 7.3 discusses the various teams that execute the Monitoring and Research Program efforts.
- Section 7.4 identifies the reports that are prepared by the Monitoring and Research Program teams.

7.2 BACKGROUND

The Department's Monitoring and Research Program provides information on the characterization of discharges from the Department's operations, facilities and storm drain systems, information on the discharge of pollutants of concern, and the performance of storm water controls. This information is used to develop the program, assess the effectiveness of the SWMP, and establish the need for new or improved BMPs. The Monitoring of existing or pilot project BMPs helps in the evaluation of existing and potential BMPs.

The Monitoring and Research Program is used to further characterize pollutants (e.g., particle size, litter or pathogens) and to test control technologies. Other support activities include development of models and compiling key data necessary to make water quality decisions.

The Department has organized the Monitoring and Research Program under four tasks. This organizational structure combines and renames tasks formerly identified for the Monitoring and Research Program. The tasks were reorganized to consolidate similar activities into four teams in place of the original seven teams. This provides some cost economies, reduces duplication, and enhances communication. No research items were deleted; however, some were combined. The modeling efforts were incorporated into Monitoring and Water Quality Research. Litter Management was incorporated into Storm Water Treatment Technology Research. Research Program Management is now accomplished by the leads of the four remaining teams. These current organizational tasks include:

- Monitoring and Water Quality Research;
- Watershed Planning;
- Erosion Control; and
- Storm Water Treatment Technology Research.

The Department has created project teams to address each of these tasks. In the following section each project team is described, and a short summary of the monitoring/research effort being conducted under the project team is provided.

7.3 PROJECT TEAMS

Project teams managed under the Water Quality Program are assigned to undertake the four previously noted tasks. Each team is led by a Department staff member. Team members may include other Department staff, university researchers, expert consultants and representatives of other storm water agencies and environmental interest groups.

7.3.1 Monitoring and Water Quality Research Team

Understanding the characteristics of storm water quality is paramount to developing and implementing an effective Storm Water Management Program. The Department, through its monitoring and water quality research efforts, is providing the foundation for long-term management decisions. To provide this understanding, the Monitoring and Water Quality Research Team is overseeing activities focused on characterizing storm water runoff from the following facilities:

- Highways;
- Maintenance yards;
- Parks and ride lots;
- Rest areas;
- Toll plazas and weigh stations;
- Construction sites; and
- Discharges from the storm drain systems into receiving waters or other municipal storm drain systems.

The Department also conducts special studies as identified by the RWQCBs or SWRCB such as the monitoring of acceleration/deceleration locations.

In the support of this activity, the Team has established and annually updates the following essential manuals and supporting tools:

- Storm Water Monitoring Protocol Guidance Manual;
- Data reporting protocol;
- Electronic data validation software;
- Data analysis tool; and
- Database and data management.

The Team also manages all water quality research and monitoring data. The Team established a Web-based Water Quality Database to store and retrieve the Department's monitoring data. This team developed a load model to predict the pollutant loading from the Department's facilities around the state. Annually revised pollutant event mean concentrations (EMCs) are used to assess mass loading from the Department's facilities. The Team provides major input to the planning and phasing of the Department's monitoring activities. The Team also produces software tools for use by the Department's environmental planners and storm water managers to address Permit obligations and incorporate water quality considerations at various steps in the transportation project planning process. The current water quality planning tool is available on the Web and can identify:

- All hydrological subareas and downstream subareas in California;
- Water quality characteristics of all the Department's facilities and estimated storm water runoff loads;
- Water quality standards downstream of the hydrological subareas; and
- 303(d) listed waterbodies by hydrological subarea.

The planning and modeling tools developed by the Team provide support services and are used by the Department's District offices in watershed planning.

The practical application of the Department's Web-based water quality tool including the pollutant load prediction model was demonstrated to the California SWRCB staff on September 4, 2001. At the request of the SWRCB, a more user-friendly version of the load model is being prepared and will be shared with all RWQCB's staff for their use and comments. In addition, as more storm water characteristics become available, the Team will refine the pollutant EMC on a regional basis to better predict mass loading throughout the state.

The Team is also responsible for preparation of the following annual reports:

- The Three-Year Action Plan: This document provides the planning element of the Monitoring and Research Program and describes activities and studies to be conducted by the Department's project teams during the next three-year period, including details of the upcoming rainy season's monitoring efforts. This report also provides the information required in the statewide Permit for the Plan of Characterization;
- Characterization and Monitoring Plan: This document provides the sampling and analysis element of the Monitoring Program and summarizes various topics in storm water monitoring activities, including sampling locations, sampling frequencies and methods, analytical methods, quality assurance/quality control, and data evaluation;
- Annual Summary Report: This document provides a summary of the status and principal findings of each study conducted during the previous year; and

- Annual Data Summary Report: This document provides summary of all monitoring data collected during each monitoring season.

7.3.2 Watershed Planning Team

A Watershed Planning Team has been created to assist various Districts in watershed planning efforts. This team will also work cooperatively with RWQCB staff during the development of its watershed studies and evaluation of its results. During the development of the studies, the Department will seek RWQCB input on monitoring site selection and sampling and analysis plans. The Department will review its results and recommendations of the study with the RWQCB to help establish the appropriate BMPs to be considered on a watershed basis.

Research-focused watershed planning activities currently under way include a study in the Navarro River watershed in Mendocino County that examines impairments, pollutants causing these impairments and potential controls.

7.3.3 Erosion Control Team

The Erosion Control Team evaluates the effectiveness of existing erosion control measures in terms of reducing sediment loads in discharges. The team also identifies potential upgrades to slope design criteria and erosion control measures and evaluates their relative effectiveness. The team provides expert assistance to the Districts in the form of field reviews, recommendations and guidance development. In addition, the team is investigating techniques to more effectively establish and maintain vegetation during the initial short-term first growth and for long-term establishment.

7.3.4 Storm Water Treatment Technology Team (SWTTT)

The Storm Water Treatment Technology Team initiates and manages special BMP pilot studies around the state. These studies are designed to evaluate the effectiveness of selected treatment BMPs in reducing constituents of concern, constituent removal efficiency, technical feasibility, and the cost of retrofitting existing facilities. The Team also identifies potential innovative treatment BMPs that address the specific storm water constituents expected to cause exceedances of water quality standards. The results from both the pilot studies and the new concept BMPs are used to help define the implementation scenarios available to the Department to address specific pollutants within various watersheds.

Litter has been identified as a high-priority pollutant in some areas of the state through TMDLs and 303(d) listing. The Department has initiated an effort to better understand the nature of litter on the Department's highway system and how this litter impacts water quality. The Department is also investigating methods to manage litter to improve water quality. The key focus of the Team's activities in this regard is field testing and evaluation of litter management practices to assess their effectiveness in reducing the litter that is discharged from the Department's storm water conveyance systems.

Most of the BMPs pilot-tested are assessed for a minimum of two years. In assessing the effectiveness of these treatment BMPs, the Department considers constituent removal, operation and maintenance requirements, costs (both capital and Operation and Maintenance [O&M]) and overall performance.

BMPs are evaluated for compliance with MEP and water quality standards. This information is provided to the Department's SWATs for consideration of potential BMP deployment or for conducting pilot studies to further investigate these potential BMPs. The status of research activities will be documented in the "Storm Water Treatment Technology Research Status Report."

The New Technology Report will annually summarize assessments to date of new or innovative BMPs. This report will include consideration of information coming from implementation and research efforts by the Department and others.

7.4 REPORTING

Provisions K.1 and K.2 of the permit require the Department to conduct discharge and receiving water monitoring. **By April 1 of each year**, the Department is to submit a monitoring and reporting program, subject to the acceptance of the Executive Director of SWRCB, that will be implemented in the subsequent reporting period. At a minimum, the Department will submit a detailed draft proposed program at least **60 days prior** to April 1 to the SWRCB and begin meeting with SWRCB and RWQCB staff during the 60-day period to review and revise the plan as needed to ensure the proposed program is acceptable to the Executive Director of the SWRCB, when submitted on April 1.

Reporting on the Monitoring and Research Program is addressed by the different project teams. A summary of the reports and project teams is shown in Table 7-1. Table 7-1 has been revised to indicate that Water Quality and Load Assessment Reports are now Web-based submittals.

TABLE 7-1: SUMMARY OF REPORTS PREPARED FOR THE MONITORING AND RESEARCH PROGRAM

Title of Report	Description	Project Team Responsible for Preparation
Storm Water Monitoring Program: Annual Summary Report FYXX	Presents results of past year monitoring efforts, including analytical results and study findings.	Monitoring and Water Quality Research Team
Storm Water Monitoring Program: Annual Data Summary Report	Report (Web site) presenting monitoring results of past year.	Monitoring and Water Quality Research Team
Storm Water Monitoring Program: Characterization Monitoring Plans, FYYY	Presents proposed monitoring activities, including sample locations, constituents, etc., for upcoming year.	Monitoring and Water Quality Research Team
Storm Water Monitoring Program: 3-Year Action Plan, FYXX through FYZZ	Presents 3-year monitoring activities.	Monitoring and Water Quality Research Team
Water Quality Assessment (Web-based Submittal)	The water quality planning tool calculates Department storm water quality runoff constituents at each hydrologic unit under an MS4.	Monitoring and Water Quality Research Team
Load Assessment (Web-based Submittal)	Presents the results of the load prediction model using current water quality information by revising the load estimation used in Water Quality Planning Tool.	Monitoring and Water Quality Research Team
Storm Water Treatment Technology Research Status Report, FYXX	Presents the status of ongoing treatment technology related research.	Storm Water Treatment Technology Team
New Technology Report FYXX	Presents assessments of new or innovative, or existing BMPs.	Storm Water Treatment Technology Team
Erosion Control Research Status Report FYXX	Presents the status of ongoing erosion control research.	Erosion Control Team

All reports submitted to the SWRCB and RWQCBs will contain sufficient information to ensure staff can make professional judgements on the acceptability of the proposed plan or study findings. The reports are to contain a summary of the proposed study or findings and a summary of the sampling and monitoring results. The report will also contain a detailed report providing raw data, quality control and assurance data and results, evaluation and assessment tools and analysis, analytical results, details on site selection and rejection, and other data deemed pertinent to the study or as requested by the SWRCB or RWQCB.

8.1 OVERVIEW

This section describes how the Department currently evaluates its storm water quality program. The overall strategy of the Department for reducing pollutants to the MEP and protecting receiving waters involves the use of effective storm water management practices and a process of continuous program improvement and refinement. That process will be supported by implementing the monitoring described in Section 7 and the evaluation described herein. Reporting is discussed in Section 9. As part of its storm water management program, the Department regularly reviews its activities, inspects its facilities, oversees and guides its personnel and conducts focused studies to obtain information that supports responsible management and allocation of the resources available to implement storm water quality efforts.

The remainder of this section is organized as follows:

- Section 8.2 describes the establishment of evaluation and assessment tools and measurable goals to be incorporated into the SWMP.
- Section 8.3 describes how the Department conducts program evaluation of its storm water management activities and decides how the program should be revised or otherwise refined to make the best use of available resources.
- Section 8.4 describes the Department's self-audit activities.

8.2 EVALUATION AND ASSESSMENT TOOLS AND MEASURABLE GOALS

In consultation with the SWRCB and RWQCBs, the Department is developing appropriate program evaluation and assessment tools and establishing measurable goals for SWMP implementation. The evaluation and assessment tools and goals will be implemented **by April 1, 2002,** and will be used for the program evaluation and assessment conducted for the Annual Report. The tools and goals will be amended or revised as needed when future revisions to the SWMP would require new or revised tools or goals be developed and implemented (also see Section 8.4).

8.3 STORM WATER MANAGEMENT PROGRAM EVALUATION, OVERSIGHT AND ASSISTANCE

The primary mechanism for accomplishing program evaluation and ensuring that front line personnel have adequate assistance to be successful is the day-to-day supervision by the District Division Chiefs. The Department's management provides oversight to ensure compliance with the Statewide SWMP. Such oversight includes observing and evaluating Design and Construction personnel as they implement the requirements of the Statewide SWMP on new projects and Maintenance Division personnel as they conduct highway maintenance activities.

The District Division Chief for Design supervises the District's Project Engineers to ensure compliance and, as needed, brings in assistance from within the District or from Headquarters. The District Division Chief for Construction supervises the District's REs to ensure compliance and, as needed, brings in assistance from within the District or from Headquarters. The District Division Chief for Maintenance supervises the District's Area Superintendents to ensure compliance and, as needed, brings in assistance from within the District or from Headquarters.

In addition to day-to-day supervision by District managers, the Department's Headquarters program management (i.e., Design, Construction and Maintenance) provides focused follow-up checks with their counterpart District functional units on a regular basis. These checks involve:

- On-site visits;
- Periodic meetings; and
- Functional reviews of District activities by Headquarters.

Feedback from these management oversight activities assists the Department in addressing the following types of questions:

- Is the Department properly integrating storm water management practices into the Design, Construction and Maintenance Programs?
- Are the organizational structures and procedures functioning effectively and efficiently?
- Are the prescribed procedures for incorporating practical BMPs into daily activities working properly?

8.3.1 Internal Multi-Functional Meetings

The Water Quality Program staff will host periodic meetings throughout the year of the Storm Water Quality Advisory Teams (SWATs) and the District Storm Water Coordinators to review progress in Statewide SWMP implementation. These meetings identify the key issues noted by the individual SWATs. Areas of concern and recommendations for improvement that are discussed in these meetings are used in preparation of the Annual Report (see Section 9.2).

In addition to the SWAT meetings, the Department holds internal meetings as needed to review progress in Statewide SWMP implementation to identify areas of concern and problems and to suggest improvements in implementation of the Statewide SWMP. The Project Design SWAT (including Headquarters Project Delivery representatives and the District Project Delivery Storm Water Coordinators) meets to discuss and make revisions to the design and construction aspects of the Statewide SWMP. The Maintenance SWAT (including Headquarters Maintenance representatives and the District Maintenance Storm Water Coordinators) meets to discuss and make revisions to the maintenance aspects of the Statewide SWMP. The Water Quality SWAT (including Headquarters Water Quality Program representatives and the District NPDES Storm

Water Coordinators) meets to discuss and make revisions to the treatment control aspects of the Statewide SWMP.

8.3.2 External Meetings

Regionally focused, quarterly meetings coordinated by the Headquarters Water Quality Program staff and in cooperation with staff of the SWRCB are to be held with one or more of the RWQCBs and representative Districts. The meetings will be rotated around the state as established by the Water Quality Program or at the request of the Districts, RWQCBs or the SWRCB. The purpose of these meetings is to discuss regionally specific issues and requirements that arise from implementing the Statewide SWMP.

The Districts (either individually or in groups) periodically hold meetings regarding implementation of the Statewide SWMP with the RWQCBs to discuss regionally specific issues.

8.4 SELF-AUDIT

The goals of the Department self-audit are:

- To evaluate the efficiency and effectiveness of the activities outlined in the Statewide SWMP;
- To provide a sound basis for re-directing or refining such activities;
- To recommend ways to revise or refine the Statewide SWMP, as needed; and
- To assess compliance with Permit and program requirements.

The Department's self-audit serves as a quality control mechanism to help the Department determine how well the activities identified in this Statewide SWMP are being implemented. The self-audit is viewed as independent from line management. It will be carried out by the Water Quality Program under the direction of the Director. The results of the self-audit will be included in the Annual Report.

Provision K.3.d of the Permit requires the Department to submit an outline of the proposed audit **by February 1** of each year. As agreed to by representatives from the Department and SWRCB, the Annual Compliance Review Plans prepared by Construction and Maintenance in August of each year will meet the requirement for the following February submittal. The tools and measurable goals to be developed (Section 8.2) will address this requirement. Annually, the tools and goals will be reviewed and revised, if needed. Any revisions will be reviewed with the SWRCB and RWQCB and submitted with the Compliance Review Plans. The Construction Division has completed its development of tools and measurable goals; Maintenance is currently preparing its tools and goals.

The Construction and Maintenance Divisions perform Compliance Monitoring to evaluate compliance of projects with the requirements of the Permit, compile reporting information and

evaluate BMP implementation. Design Compliance Monitoring is a new SWMP element that will be developed by the PD SWAT at a later time.

8.4.1 Construction Compliance Monitoring

Construction Compliance Monitoring is performed by the Water Quality Program with the following objectives:

- Evaluate compliance of construction projects statewide with the requirements of the Permit;
- Report compliance status to the Department's management; and
- Evaluate BMP implementation trends, suggest areas of improvement, and identify new BMP implementation methodologies.

Each August, an Annual Construction Compliance Review Plan (ACCRP) is prepared that describes compliance evaluation criteria, protocols and reporting methods for the upcoming year's compliance monitoring program. The ACCRP will be shared with the SWRCB and RWQCBs. The key elements of the ACCRP are discussed below.

8.4.1.1 Project Selection Criteria

Each year, the ACCRP will describe how the construction projects to be reviewed during the ensuing year will be identified. This determination may involve extra emphasis on projects of a certain size or in a particular geographic area. However, every year, all significant construction projects will be reviewed and rated.

8.4.1.2 Project Review Criteria

Projects are reviewed for the overall effectiveness of their storm water pollution prevention implementation and compliance with Permit requirements. During an inspection, the implementation of soil stabilization controls, sediment controls, sediment-tracking controls, wind erosion controls, non-storm water controls, waste management and materials pollution controls and required documentation are reviewed. Inspections are conducted year round with emphasis placed on seasonal considerations (e.g. soil stabilization and sediment controls are stressed during the rainy season). The compliance status of the project is documented on a standardized site inspection checklist, which is modified annually and contained in the ACCRP. As a part of the completed inspection checklist, the efficiency of the BMPs observed are summarized and an overall project rating is assigned based on the inspection results.

8.4.1.3 Compliance Enforcement and Reporting Protocol

Inspection reports and project ratings are provided to the project RE at the close of the inspection. Reports and ratings are also made available within one week to the District Storm Water Coordinator and District Management.

Projects identified as having major or critical deficiencies will address the deficiencies immediately and are re-inspected to ensure improvements have been made. The reporting protocol and re-inspection schedule followed for compliance enforcement is illustrated in Figure 8-1.

Projects identified as having major or critical deficiencies are reported to the District Construction Storm Water Coordinator and District Construction management immediately. The RE is responsible for ensuring the deficiency is corrected as soon as practicably possible. The RE will notify Headquarters immediately upon the deficiency being corrected, and a re-inspection will be scheduled for approximately one week after the notice of deficiency to ensure that the District has adequately addressed the deficiencies. District Construction management is invited to participate in the re-inspection. If, after the re-inspection, no improvement is seen, notice is given to District Construction management again, and another inspection by both District personnel and Headquarters Water Quality Program management personnel is scheduled for one week later. The RWQCB will be **notified immediately** if, after the first notice, the RE failed to correct the deficiency before the next rain event occurs.

8.4.1.4 Feedback and Program Improvement

Construction project compliance review results and lessons learned are documented and reported to the Department's personnel using four primary methods:

- **Weekly Electronic Mail:** On a weekly basis, a summary of compliance monitoring activities is provided to District and Headquarters management via e-mail. The summary includes an up-to-date listing of project compliance ratings, a description of the projects inspected during the previous week that were identified as having major or critical deficiencies, and other issues of note.
- **District Briefings/Construction Program Briefings:** At the request of District or Headquarters management, the Compliance Monitoring Team presents a briefing on field observations and discusses the findings of recent compliance inspection reviews. These briefings serve as a management tool for the District and provide feedback to Headquarters staff for program improvement. In the absence of a face-to-face meeting, the information is transmitted in summary form by electronic mail.
- **Bulletins:** The Compliance Monitoring Team will periodically issue bulletins focusing on issues related to Design and Construction.
- **Meetings with District Personnel:** The Compliance Monitoring Team participates in meetings with District personnel (e.g., Project Engineer Meetings, RE Meetings, Design and Construction Managers' Meetings) to discuss the findings of the compliance inspection reviews.

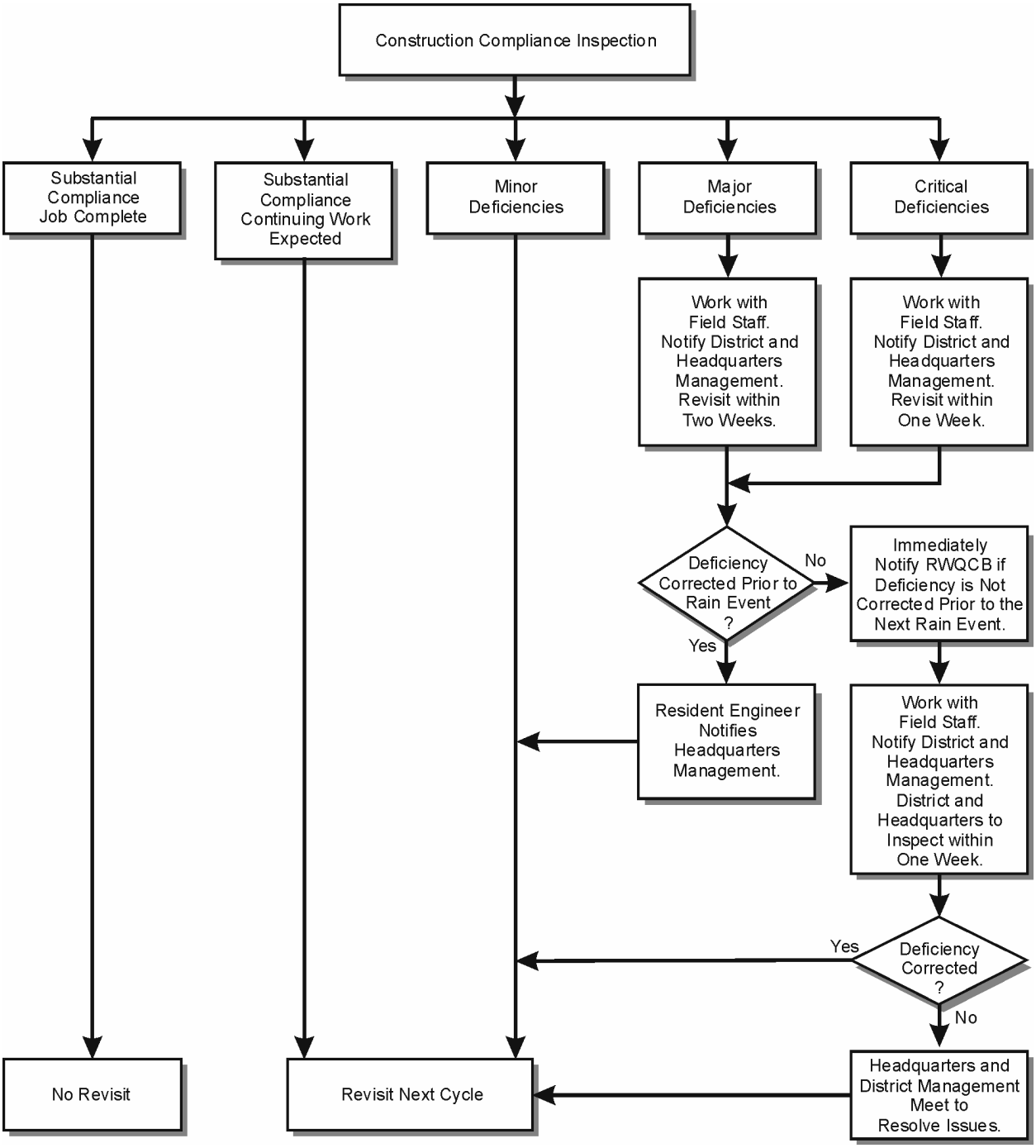

Figure 8-1
Construction Compliance Review Flowchart

8.4.1.5 Inspection Cycle Performance Reports

The Department will develop a Year-End Summary Performance Report. This report shall be provided to the SWRCB with each Annual Report. It shall cover the rainy season ending the previous April 15 and the non-rainy season ending the previous October 15. The reports will include:

- An explanation of site selection and review criteria for projects inspected during the cycle;
- Details of continuous training, including the Design and Construction storm water pollution prevention bulletins published for the period;
- Overall performance assessment, including information pertaining to all unfavorably rated construction projects, a compilation of all ratings received during the cycle, individual BMP effectiveness and BMP implementation evaluation, and a comparison with the results of the previous year;
- BMP implementation trends, including observations of good water pollution control practices and challenges encountered;
- A list of overall challenges and suggested solutions to improve water pollution control; and
- An expanded inspection log that identifies the entire compliance review history of each project inspected during the applicable inspection cycle.

The information contained in the Performance Reports will be considered by the SWATs as part of the process to annually update the SWMP.

A summary of the inspection reports generated by the audits will be provided in the Annual Report. For the purposes of consistency, the FY 2002 Annual Report will include a Summary of Inspection Reports covering an 18-month period. This one-time adjustment from the previous seasonal reporting requirement will adjust the inspection reporting schedule to better match the reporting period for the Annual Report. The Department will work cooperatively with the SWRCB to develop a format for reporting the summary.

8.4.2 Maintenance Compliance Monitoring

Maintenance Compliance Monitoring is performed by the Water Quality Program with the following objectives:

- Evaluate compliance of maintenance sites with the requirements of the Permit;
- Report compliance status to the Department's management; and
- Evaluate BMP implementation trends, suggest areas of improvement, and identify new BMP implementation methodologies.

In August of each fiscal year, an Annual Maintenance Compliance Review Plan (AMCRP) is prepared that describes the compliance evaluation criteria, protocols and reporting methods for the upcoming years' compliance monitoring program. The AMCRP will be shared with the SWRCB and RWQCBs.

The following key elements of the AMCRP are discussed below:

- Maintenance site selection criteria;
- Maintenance site review criteria;
- Compliance enforcement and reporting protocol; and
- Feedback and program improvement.

8.4.2.1 Maintenance Site Selection Criteria

Each year, the AMCRP will describe how the maintenance sites to be reviewed during the ensuing year will be identified. This determination may involve consideration for maintenance site size, type of activities, geographical location, etc.

8.4.2.2 Maintenance Site Review Criteria

Maintenance sites are reviewed for overall effectiveness of their storm water pollution prevention implementation and their potential for pollutant discharge. During an inspection, the implementation of BMPs, non-storm water management, waste management and disposal controls, and required documentation are reviewed. Inspections are conducted year round. Compliance status is documented on a standardized site inspection checklist. As a part of the completed inspection checklist, the efficiency of the BMPs observed is summarized, and an overall site rating is assigned based on the inspection results.

8.4.2.3 Compliance Enforcement and Reporting Protocol

Inspection reports and site ratings are provided to District Maintenance personnel at the close of the inspection. Reports and ratings are also made available to the District Storm Water Coordinator and District management within one week.

Major or critical deficiencies identified at maintenance sites will be addressed immediately and re-inspected to ensure improvements have been made. The reporting protocol and re-inspection schedule followed for compliance enforcement is illustrated in Figure 8-2.

The maintenance sites with major or critical deficiencies are reported to the District Maintenance Storm Water Coordinator and District Maintenance management immediately. The Regional Maintenance Manager is responsible for ensuring the deficiency is corrected as soon as practicably possible. The Regional Maintenance Manager will notify Headquarters immediately upon the deficiency being corrected and a re-inspection is scheduled for approximately one week after the notice of deficiency to ensure that the District has adequately addressed the deficiencies.

District Maintenance management is invited to participate in the re-inspection. If, after the re-inspection, no improvement is seen, notice is given to District Maintenance management again and another inspection by both District and Water Quality Program management personnel is scheduled for one week later. The RWQCB will be **notified immediately** if after the first notice the Maintenance Supervisor failed to correct the deficiency before the next rain event occurred.

8.4.2.4 Feedback and Program Improvement

Maintenance site compliance review results and lessons learned are documented and reported to the Department's personnel using four primary methods:

- **Weekly Electronic Mail:** On a weekly basis, a summary of compliance monitoring activities is provided to District and Headquarters Management via e-mail. The summary includes an up-to-date listing of maintenance site compliance ratings, a description of the sites inspected during the previous week that were identified as having major or critical deficiencies, and other issues of note.
- **District Briefings/Maintenance Program Briefings:** At the request of District or Headquarters management, the Compliance Monitoring Team presents a briefing on field observations and discusses the findings of recent compliance inspection reviews. These briefings serve as a management tool for the District and provide feedback to Headquarters staff for program improvement. In the absence of a face-to-face meeting, the information is transmitted in summary form by electronic mail.
- **Bulletins:** The Compliance Monitoring Team will periodically issue bulletins focusing on issues relevant to the Maintenance Program.
- **Meetings with District Personnel:** The Compliance Monitoring Team participates in meetings with District personnel (e.g., the Maintenance Supervisor) to discuss the findings of the compliance inspection reviews.

8.4.2.5 Inspection Cycle Performance Reports

A Performance Report will be prepared and submitted with the Annual Report. The reports will include:

- An explanation of site selection and review criteria for sites inspected during the cycle;
- Details of continuous training, including the Maintenance storm water pollution prevention bulletins published for the period;
- Overall performance assessment, including information pertaining to all unfavorably rated Maintenance sites, a compilation of all ratings received during the cycle, individual BMP effectiveness and BMP implementation evaluation, and a comparison with the results of the previous year;

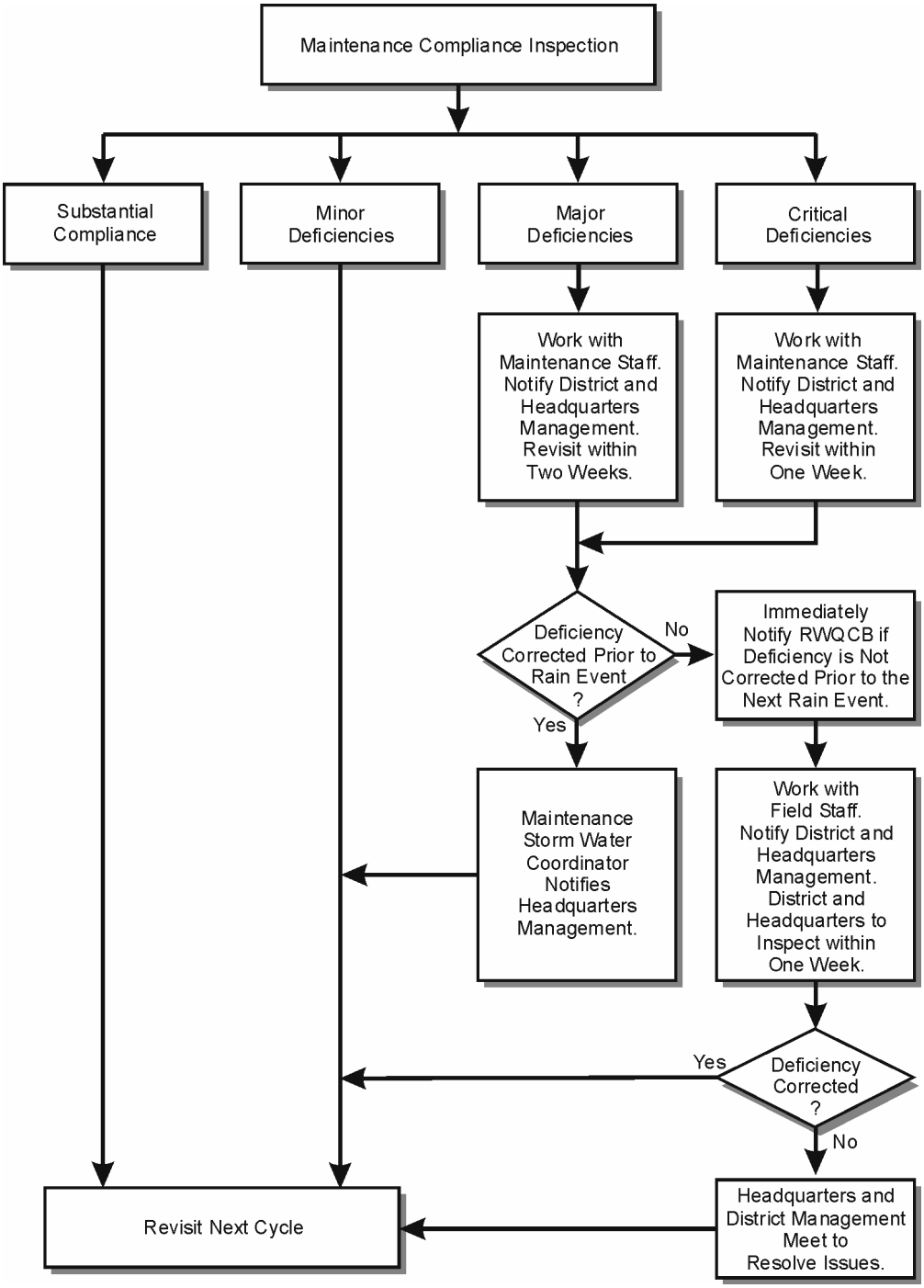

Figure 8-2
Maintenance Compliance Review Flowchart

- BMP implementation trends, including observations of good water pollution control practices and challenges encountered;
- A list of overall challenges and suggested solutions to improve water pollution control; and
- An expanded inspection log that identifies the entire compliance review history of each site inspected during the applicable inspection cycle.

The information contained in the Performance Reports will be considered by the Maintenance SWAT in revising the BMPs as part of the process to annually update the SWMP.

A summary of the inspection reports generated by the audits will be provided in the Annual Report. The Department will work cooperatively with the SWRCB to develop a format for reporting the summary.

8.4.3 Design Compliance Monitoring

Design Compliance Monitoring is a new SWMP element that will be developed by the Department's Headquarter's Project Design Storm Water Advisory Team (PD SWAT) in accordance with the schedule provided in Section 8.4.3.1, and will be implemented by the Districts with the following objectives:

- Evaluate compliance of project planning and design activities with requirements of the Permit and the approved SWMP;
- Identify activities or SWMP elements needing improvement, changes or revisions;
- Identify training needs; and
- Report compliance status to the Department's management, SWRCB and RWQCBs.

Currently, each District is responsible for implementing a design review process that was developed by the individual District based on local requirements and project needs. The review process is also dependent upon District organization and may be conducted by different functional area staff or teams within each District. Because of this, elements of a District's compliance review and implementation of the review may vary among the Districts. The Design Compliance Monitoring that will be implemented through the SWMP is intended to address this variability. It will be developed by the PD SWAT, implemented through the Districts, and will require documentation and reporting of the review findings to Headquarters (HQ) and/or the Annual Report.

The key elements of the proposed Design Compliance Monitoring are:

- Project Planning and Design Checklists;
- Compliance monitoring and reporting protocol;

- Feedback and program improvement; and
- Annual reporting.

8.4.3.1 Development and Implementation Schedule

The SWMP is being revised by the Department to comply with Resolution No. 2001-070 approved by the SWRCB at its May 17, 2001, board meeting. Several elements of the SWMP are currently undergoing significant changes that address project planning and design activities. Consequently, Design Compliance Monitoring for design activities will be developed and implemented in three phases as follows:

Activities Prior to January 1, 2002

Until January 1, 2002, each District will continue to use the storm water procedures checklists and review processes that had previously been developed to determine compliance with the storm water requirements during the project planning and design phases. The checklists include the following elements:

- Inclusion of Pollution Prevention BMPs in projects;
- Consideration of the need for approved treatment BMPs in projects;
- Inclusion of Standard Special Provisions (SSPs) in projects;
- Determine need to include temporary construction BMPs;
- Prepare storm water quality informational handout for bid documents; and
- Prepare and submit NOC.

Subsequent to April 1, 2002

By April 1, 2002, the Department's PD SWAT will develop and the Regions/Districts will begin implementing a revised Design Compliance Monitoring process. The goals of the proposed compliance process are:

- Be consistent to ensure design activities consistently implement elements of with the approved Storm Water Management Plan (SWMP).
- To provide consistent statewide measurement standards for SWMP implementation and evaluation.
- To monitor design projects for compliance with basic processes and procedures developed by the PD SWAT.
- To report compliance data to the Department's management.
- To gather data to identify implementation trends and suggest to identify needs for SWMP revisions, design activities improvements, and training. Until January 1,

2002, the Department's Regions/Districts will continue to use their own storm water procedures checklists and/or a review processes to determine compliance with the storm water requirements during the project planning and design phases.

Annual Review and Update

Annually, the Department will review and evaluate its SWMP and propose changes as needed to improve its effectiveness. Changes to the Design Compliance Monitoring section will be incorporated into future updated versions of the SWMP and provided to the SWRCB and RWQCBs with justification through the Annual Reporting requirements of the Permit (see Section 9.2 of the SWMP).

8.4.3.2 Project Planning and Design Checklist

A Project Planning and Design Checklist (Checklist) will be the basis for determining compliance with the design pollution prevention and treatment BMP requirements of the permit and SWMP. The Checklist will be used by the Districts and will include the process and procedures that will be followed in order to ensure BMPs are being considered and appropriately incorporated into Department projects. Any needed changes to Design Compliance Monitoring will be incorporated in future updated versions of the Checklist. The Checklist may be modified based on feedback from the Districts PD SWAT representative or NPDES Storm Water Coordinator. Districts may also modify the Checklist to meet specific local requirements.

8.4.3.3 Design Project Review

Project Checklists will be reviewed by District reviewers for compliance with developed storm water procedures during the project constructability review. The reviewers will be identified within each District. The project may require modification based on the results of the project review.

8.4.3.4 Compliance Monitoring and Reporting

The District reviewers will provide feedback to the Project Engineer (PE) and Design Senior as necessary to correct any deficiencies at the end of each review. The PE will then be responsible for addressing any of the identified Checklist deficiencies and for scheduling a re-review if needed.

The Districts reviewers will summarize the review information quarterly and forward this to HQ. HQ will then analyze the compiled information from the individual Districts to recommend program changes that will assist the Districts to achieve project compliance in the project planning and design phases. The reviewers may also make recommendations for future SWMP changes.

8.4.3.5 Feedback and Program Improvement

Design project compliance review results and lessons learned will be documented and reported to the Department's design staff statewide using four primary methods:

- **Quarterly Electronic Mail:** The District reviewers will provide a quarterly summary of compliance monitoring activities to the HQ by e-mail in a format specified by the PD SWAT. The summary will include:
  - Number of projects reviewed
  - Project findings
  - Suggestions for program revisions
- **Bulletins:** The Department may periodically issue internal bulletins or write articles to be published in newsletters focusing on issues related to planning and design procedures or design changes.
- **Meetings with District Personnel:** The District reviewers may participate in meetings with HQ or District personnel (e.g., Project Engineer Meetings, Design Managers' Meetings, PD SWAT meetings) to discuss their findings and recommendations for program changes.

8.4.3.6 Annual Reports

The information to be included in the Annual Report will be first reviewed by the PD SWAT as part of the process to annually update the SWMP. A summary of Design Compliance Monitoring activities will be provided in the Annual Report including:

1. The design checklist used during the previous year;
2. A new checklist for the upcoming year, if needed;
3. A summary of the review findings; and
4. A summary of lessons learned, trends, challenges encountered, and proposed program changes.

8.5 OVERALL STORM WATER PROGRAM EVALUATION

The overall Storm Water Program is evaluated by the Water Quality Program with the following objectives:

- Evaluate the adequacy of communication between the various storm water coordinators in each district and between the districts and HQ functional programs; and
- Evaluate District coordination with the RWQCBs.

8.5.1 Communication Evaluation

The various methods of communication in place between the district storm water coordinators will be reviewed and analyzed to determine their effectiveness. This will include a review of each district's organization, specifically any general coordination meetings that take place between the various coordinators. Communication between the HQ Programs and the District Storm Water Coordinators is also reviewed. The overall effectiveness of the communication between the various parties will be determined by meeting with the individual coordinators to discuss storm water issues and obtain feedback on what parts of the program work well and where improvements could be made.

Evaluation and assessment tools to be developed as described in Section 8.2 will significantly add to the communication evaluation. Included in the evaluation will be a review of each district's mechanisms that are in place to facilitate communication between adjacent districts and the RWQCBs. Assurance that proper coordination of the Regional Work Plans has taken place with all parties will be part of this process.

8.5.2 Feedback and Program Improvement

A report will be prepared each year that summarizes the findings of these evaluations. An overall assessment of the District communication will be included. Specific challenges that prevent effective communication will be documented, and recommended improvements to the communication structure based on what is found to be working in Districts with good communication procedures will be discussed. Findings for individual districts will be discussed with that district Storm Water Coordinators. The report, its findings, and recommendations will be included in the Annual Report.

9.1 OVERVIEW

This section describes how the Department will report to the SWRCB. This section is organized as follows:

- Section 9.2 describes the Annual Report;
- Section 9.3 describes the De-icer Report;
- Section 9.4 describes how the Department will report instances of noncompliance;
- Section 9.5 discusses general discharge prohibitions; and
- Section 9.6 discusses requirements of the Lahontan Regional Water Quality Control Board.

9.2 ANNUAL REPORT

The reports from the Monitoring and Research Program (Section 7) and the Program Evaluation efforts (Section 8) will be incorporated into the Annual Report, along with other Permit reporting requirements. In addition to submitting material specifically required by the Statewide SWMP and the Permit, the Annual Report will serve as a self-audit by providing detail, brief summaries and other information on the development and implementation of activities conducted by the Department statewide and by providing an evaluation and assessment on the appropriateness and effectiveness of the BMPs implemented through the SWMP. These other reporting requirements and the corresponding Permit and Statewide SWMP sections are discussed in the following subsections.

9.2.1 Annual Report Format

The Department worked cooperatively with the SWRCB and RWQCBs to develop a strategy for compiling and reporting annual activities. The strategy and format will be implemented beginning with the April 2002 Annual Report.

9.2.2 Non-Storm Water Report

Provision B.9 of the Permit requires the submittal of a Non-Storm Water Report as part of the Annual Report. Non-storm water discharges are addressed in Sections 4.7 and 5.4 of this Statewide SWMP. This report will include additional non-storm water discharges identified during the reporting period and provide a characterization of these discharges. Revisions to BMP programs for currently permitted non-storm water discharges to be implemented in the coming year and any proposed additional non-storm water discharges and associated BMPs to be permitted will be described and justified in this element of the Annual Report.

9.2.3 Revised Statewide SWMP

Provision E.1 of the Permit requires the SWMP to be reviewed annually and revised as necessary to maintain an effective program. The revised Statewide SWMP is to be submitted as part of the Annual Report. The Annual Report will contain documentation that describe and justify the proposed SWMP changes. All levels in the Department's organization will be encouraged to suggest potential revisions to the Water Quality Program through the District Storm Water Coordinators. In addition, in the process of compiling and evaluating information for the Annual Report, the Water Quality Program may identify trends, common problems or solutions that may dictate further revisions to the Statewide SWMP. Revisions to the SWMP may also be initiated at the request of the SWRCB or RWQCB staff. Both the draft Annual Report and the draft Statewide SWMP update are made available for public review prior to being finalized and transmitted to the SWRCB. Significant revisions to the SWMP will require SWRCB approval. Annual workshops in both Northern and Southern California will be held to help facilitate public input on these documents. In addition, as required by Section F.1 of the Permit, this review will include a re-evaluation and revision of the BMP program.

9.2.4 Regional Work Plans

Provision E.2 of the Permit requires the submittal of Regional Work Plans as part of the Annual Report. The Department worked with the SWRCB and RWQCBs to develop a standard format to be used for work plan development and submittal. Regional Work Plans (Section 2.5) provide details on activities to be conducted by a District during the upcoming reporting period to comply with the Permit and SWMP.

The Department will develop and submit Regional Work Plans to the SWRCB each year by April 1, as part of the Annual Report. The Regional Work Plans will also be forwarded to the appropriate RWQCB Executive Officer for approval. The Regional Work Plans will describe the activities that will be conducted by the Districts during the reporting period to implement the SWMP. These work plans are organized as follows:

- Section 1 – Introduction;
- Section 2 – Personnel and Responsibilities;
- Section 3 – District Facilities and Water Bodies;
- Section 4 – High Risk Areas; and
- Section 5 - Implementation

The Department worked cooperatively with the SWRCB and RWQCBs to develop and implement a standardized work plan format.

The Districts will coordinate and meet with the appropriate Regional Boards to discuss the proposed Regional Workplans **at least 30 days** prior to the April 1 due date each year.

In addition to the Work Plan that details activities to be conducted in the next reporting period, the Annual Report will provide a detailed summary of the Work Plan activities conducted by the Districts during the preceding reporting period. The report will also identify activities not conducted, provide a justification for why the activities were not conducted, and describe the alternative activities conducted or to be conducted.

9.2.5 BMP Selection Report

Provision F.3.f of the Permit requires the submittal of a BMP Selection Report as part of the Annual Report. The BMP Selection Report is presented as Appendix B of this Revised Statewide SWMP. Appendix B will be updated annually, as part of the Statewide SWMP update. BMP changes or additions will be described and justified in the Annual Report and Appendix B of the accompanying Statewide SWMP update.

9.2.6 New BMP Selection

Provision F.3.g of the Permit requires the Department to create a mechanism for new treatment and control technologies as part of the BMP program. This will be reported in the New Technologies Report submitted as an attachment to the Annual Report. This report is being done through the Monitoring and Research Activities (Section 7) and will address BMPs to meet MEP and protect water quality.

9.2.7 Municipal Coordination Program Report

Provision G.1.b of the Permit requires the submittal of a Municipal Coordination Plan as part of the Annual Report. Procedures for coordination with MS4 storm water management programs are described in Section 2.4 of this Statewide SWMP. Additional details of the coordination activities to be conducted during the reporting period are contained in the Regional Work Plans. The Municipal Coordination Plan will be updated accordingly as part of the annual SWMP and Regional Work Plan updates. Activities conducted throughout the Districts and Headquarters to implement the municipal coordination plan and activities described in the District work plans during the previous reporting period will be described and summarized in the Annual Report.

9.2.8 Analysis of the Adequacy of Legal Authority

Provision G.2.b of the Permit requires the Department to provide an Analysis of the Adequacy of Legal Authority as part of the Annual Report. The analysis of the adequacy of legal authority is described in Section 2.7 of this Statewide SWMP. This Section will be updated as part of the annual Statewide SWMP update process. Specific problems encountered while implementing the storm water program as described in the Statewide SWMP that develop as a result of legal constraints will be documented in the Annual Report.

9.2.9 Fiscal Analysis

Provision G.3.b of the Permit requires the Department to provide a Fiscal Analysis as part of the Annual Report in the third and fifth years of the Permit period. The Fiscal Analysis will be submitted as part of the third and fifth year reports. When fiscal constraints are encountered in implementing the program required by the Permit, these circumstances will be identified in the Annual Report.

9.2.10 Report on the IC/ID Program

Provision I.2.b(4) of the Permit requires the submittal of a report on the IC/ID program as a part of the Annual Report. These reports will summarize the actions taken on all reports of IC/IDs. The District NPDES Storm Water Coordinators are responsible for coordinating, tracking and reporting the response to IC/IDs.

Instances of IC/IDs are typically discovered by Construction (Section 4.6) or Maintenance (Section 5.3.2.3). The responsible field personnel for Maintenance and Construction (Construction REs and Maintenance Supervisors) are trained to recognize IC/IDs. IC/IDs are referred to the District NPDES Storm Water Coordinators who will coordinate with other Department functional units as necessary to correct or eliminate the IC/ID.

The public may also alert the Department to instances of IC/IDs. Each District has a Public Information Officer who responds to public or third-party contacts (District phone numbers are widely available in telephone books, on Web sites, etc.). Any reported IC/ID by the public is referred by the Public Information Officer to the District Storm Water Coordinator. The District's response to each IC/ID will be documented in the Annual Report.

9.2.11 Public Education Program Progress Report

Provision J.3.c. of the Permit requires the submittal of a Public Education Program Progress Report as a part of the Annual Report. The Public Education Program is described in Section 6.4 of this Statewide SWMP. The public educational programs conducted in cooperation with municipalities that are planned to be conducted during the reporting period will be described in the Regional Work Plans. The Annual Report will describe the progress made on the development and implementation of the Public Education Program and provide a summary of activities conducted by the Districts through its annual work plans regarding public outreach and education during the reporting period will be included in the Annual Report.

9.3 DE-ICER REPORT

Provision L.10.b of the Permit requires the submittal of a De-Icer Report for the Tahoe Basin. These reports will describe the results of the abrasives and de-icing materials analysis and the annual results of the De-Icer Monitoring Program in the Lake Tahoe Hydrologic Unit as these results pertain to BMP effectiveness and surface water impacts. The Permit required the De-icer

Report to be submitted with the Annual Report. The Department has volunteered to submit the De-Icer Report six months earlier than the Permit requires in an effort to provide these data in a more timely manner. The De-Icer Report is therefore submitted by October 1 every year and covers the preceding winter period. The reports will also provide a summary of the Department's Capital Improvement Program (CIP) activities within the Tahoe Basin, including progress on implementing the CIP and project effectiveness.

9.4 NONCOMPLIANCE REPORTING

Provision K.3.a of the Permit requires the Department to develop and implement a Report of Noncompliance. The following reporting protocol was developed in a cooperative effort between the Department and the SWRCB and RWQCBs staff. Unless otherwise indicated in the Regional Work Plans, the District NPDES Storm Water Coordinator will make noncompliance reports to the RWQCB Executive Officer or designee.

9.4.1 Noncompliance Reporting Plan for Municipal and Construction[1] Activities

9.4.1.1 Immediate Reporting

Conditions:

- Discharges of permitted storm and non-storm water that violate or threaten to violate[2] prohibitions, limitations and conditions of the Permit and which may endanger health or the environment;
- Discharges of prohibited non-storm water discharges that may endanger health or the environment;
- Discharges of spills of petroleum products, hazardous materials or wastes, and toxic chemicals; and
- Failure or serious damage[3] to BMP control facilities that result in discharges that may endanger health or the environment.

Department Action:

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1 Discharges from construction sites regulated by the State General Permit for Storm Water Discharges Associated with Construction Activities.

2 Examples of violations or excessive erosion to stream banks or beds, discharges that result in excessive sedimentation to the stream or water body, discharges of hazardous materials or waste or toxic materials, discharges with strong and/or lingering odors, discharges that cause high turbidity, discharges that show evidence of pollutant plume, and discharges that result in mortality of fish or aquatic species.

3 Failure or damage to a BMP that results in a system bypass or short circuiting that results in a discharge meeting the characteristics described in Footnote 2.

- Immediately notify RWQCB no later than 24 hours after discovery of the incident;
- Follow-up in writing within 24 hours;
- Perform follow-up monitoring of major spills and/or perform conformation sampling to ensure that threats to waters have been eliminated as determined by the RWQCB; and
- Retain records for three years.

9.4.1.2 Reporting in 5 Working Days[4]

Conditions:

- Discharges of non-storm water that are not authorized nor exempt by the Permit or any other NPDES permit and do not result in serious violations[5] of the State Water Code;
- Discharges that result in violations of narrative and numeric prohibitions and limitations of the permit;
- Discharge that violate requirements of the CWA, 404 permits and 401 certifications;
- Discharges that result in violations of narrative and numeric standards and requirements specified in Regional Board Basin Plans and Statewide Water Quality Plans;
- Discharges from BMP control facilities that have failed or are seriously damaged and the discharges do not result in serious violations[5] to Permit requirements; or
- Failure to submit documents or materials in accordance with the Permit or SWMP.

Department Action:

- Notify RWQCB within 5 working days;
- Follow-up within 30 days with written report describing the noncompliance problem; corrective measures implemented, a time schedule; and
- Retain records for three years.

9.4.2 Reporting Plan for Construction Activities Only

9.4.2.1 48-Hour Notification

Condition:

4 Required by Provision K.3 of Caltrans Statewide NPDES Storm Water Permit, Order no. 99-06-DWQ.

5 See definition of serious violation in Footnote 2.

- Runoff from site if determined to be causing or contributing to exceedances of water quality standards.

Department Action:

- Notify RWQCB as soon as possible but within 48 hours;
- Submit written follow-up report within 14 calendar days; and
- Keep records for three years.

9.4.2.2 30-Day Notification

Condition:

- Site is not able to certify in accordance with the annual certification requirements in the General Permit; or
- All other incidents of noncompliance not reported under the 48-hour requirement or reported under Section 9.4.1.1 or 9.4.1.2.

Department Action:

- Submit reports to RWQCB within 30 days of inability to certify or within 30 days of other instances of noncompliance; and
- Keep all records for 3 years.

9.5 GENERAL DISCHARGE PROHIBITIONS

Provisions A.1 through A.17 of the Permit establish general discharge prohibitions that will be complied with by the Department. Any discharge in violation of these prohibitions will be reported in accordance with our Noncompliance Reporting Plan described in Section 9.4. As required by the Permit, the Department's discharges must not be toxic. As part of the Monitoring and Research Program outlined in Section 7, discharges will be regularly monitored for toxicity. If toxicity is discovered, it will be reported as part of the annual Water Quality Assessment Report per Section 7.4 and in accordance with the Noncompliance Reporting Plan as described in Section 9.4 when necessary.

9.6 LAHONTAN RWQCB REQUIREMENTS

In the Lake Tahoe Hydrologic Unit, the Department's discharges must not exceed the applicable numerical effluent limitations. In accordance with the Permit, the Department is under a compliance schedule to meet these limitations by the year 2008. As part of the Monitoring and Research Program outlined in Section 7, discharges in the Tahoe basin will be regularly monitored relative to these numeric limits. If pollutant levels are found to exceed these limits,

the exceedances will be reported as part of the annual Water Quality Assessment Report per Section 7.4 and in accordance with the Noncompliance Reporting Plan as described in Section 9.3 when necessary.

10.1 OVERVIEW

This section highlights regional exceptions/additions to the procedures and practices stated elsewhere in this Statewide SWMP. Such exceptions/additions reflect special conditions within the state (e.g., unique requirements due to geography, climate, terrain, local hydrology, sensitive receiving waters, RWQCB/basin plan requirements, District organization and/or specific types of facilities). In addition, the Department will develop and submit Regional Work Plans as described in Section 2.5. This section is organized as follows:

- Section 10.2 describes location-specific requirements for District 3 (Marysville).
- Section 10.3 describes location-specific requirements for District 7 (Los Angeles).
- Section 10.4 describes location-specific requirements for District 9 (Bishop).
- Section 10.5 describes location-specific requirements for District 10 (Stockton).
- Section 10.6 describes location-specific requirements for District 11 (San Diego).

10.2 CALIFORNIA DEPARTMENT OF TRANSPORTATION DISTRICT 3 (Marysville)

District 3 will implement the following location-specific storm water management practices:

- The following non-storm water discharges are prohibited within the Lahontan Region: 1) water line-flushing; 2) groundwater or surface water pumping associated with construction activities that would violate numerical limitations within the Lake Tahoe Hydrologic Unit or receiving water objectives throughout the Lahontan Region; 3) potable water resources; 4) uncontaminated pumped groundwater that would violate numerical effluent limitations within the Lake Tahoe Hydrologic Unit or receiving water objectives throughout the Lahontan Region; and 5) air-conditioning condensate (not applicable to vehicles).
- For new construction or major reconstruction of existing facilities, a storm water runoff collection, treatment and/or infiltration disposal facility will be installed and maintained for discharge of storm water runoff from all impervious surfaces generated by the 20-year, one-hour design storm within the Lake Tahoe Hydrologic Unit (one inch of rain) and within the Truckee River Hydrologic Unit (3/4 inch of rain). If site conditions do not allow for adequate on-site disposal, all site runoff must be treated, where feasible, to meet applicable effluent limits and/or receiving water limitations specified in the basin plan. Runoff in excess of the design storm and generated by the facility or within the project site will only be discharged to a storm drain or stabilized drainage adequate to convey the 100-year 24-hour flow. If it is not feasible to either accommodate on-site disposal or treat runoff to meet applicable water quality standards, then traction sand trap devices shall be provided where feasible.

- Existing storm drain facilities within the Lake Tahoe Hydrologic Unit will be retrofitted to comply with the above new construction or major reconstruction storm water runoff collection, treatment and/or infiltration disposal facility requirement by the year 2008. The RWQCB Executive Officer may approve alternative measures.
- The Department will continue to participate in the CIP, as described in Volume IV of the CWA Section 208 Water Quality Management Plan, in order to comply with the year 2008 compliance date.
- Within the Lake Tahoe and Truckee River Hydrologic Units, new construction and major reconstruction will comply with Erosion Control Guidelines for the Lake Tahoe Hydrologic Unit, the Truckee River Hydrologic Unit and the North Lahontan Region, where applicable.
- Within the Lake Tahoe and Truckee River Hydrologic Units, the Department will inspect active project sites and maintenance facilities prior to, during and after storms to ensure that BMPs are functioning as specified to prevent the discharge of pollutants to surface waters or storm water conveyance systems that discharge to surface waters.
- Within the Lake Tahoe and Truckee River Hydrologic Units, unless a variance has been granted by the Executive Director of the Lahontan RWQCB, no vegetation shall be removed nor ground surface conditions disturbed between October 15 of any year and May 1 of the following year, except: 1) in emergency situations where public health or welfare is threatened; 2) for regrading existing shoulder widths when there is neither snow on the ground nor an immediate threat of precipitation; 3) when there is no soil disturbance, or appropriate storm water runoff and erosion control measures are in place; and 4) when cleaning out ditches or culverts or filling in drop-off sections when appropriate storm water runoff and erosion control measures are in place.
- Within the Lake Tahoe and Truckee River Hydrologic Units, the Department will participate in early project design consultation. The Department will submit an SWPPP/WPCP for RWQCB staff review and approval no later than 30 days prior to beginning construction activities, and the RWQCB's proposed modifications will be included within the plans prior to beginning construction activities.
- Within the Lake Tahoe Hydrologic Unit and where abrasives and/or de-icing agents are used on highways, the Department will record the following: 1) location of the source of abrasive materials; 2) types and chemistry of salt de-icing agents, analyzed for total phosphorus, total nitrogen, iron and percent NaCl; 3) types and chemistry of alternative de-icing agents, analyzed for total nitrogen and total phosphorus; 4) type and chemistry of abrasives, with the gradation and percent organic matter and analyzed for volatile solids, iron, total nitrogen, total phosphorus and total reactive phosphorus; 5) volume of abrasives and de-icing agents used on individual highway segments.

- To reduce salt and sand usage in the Lake Tahoe area, District 3 is evaluating use of brine solution (as opposed to spreading salt) for ice control. District 3 has also modified its snow removal practices in the Lake Tahoe Basin to further minimize the use and resultant discharge of abrasives used for traction control.

  In areas where significant amounts of abrasives are required to be regularly used, the Department will:

  – Increase sweeping frequency to remove accumulated abrasives.

  – Request funding to install sand traps at all feasible discharge locations per Section 4.4.

10.2.1 California Department of Transportation District 3 Reporting/Notification Issues

In the Lake Tahoe Hydrologic Unit, District 3 will implement the following:

- The Department will submit a monitoring program proposal (De-icer Monitoring Proposal) that evaluates the effectiveness of the BMPs used to recover abrasives and de-icing materials and that evaluates the impacts of abrasives and de-icing materials on surface waters.
- The Department will submit a report (De-Icer Report) as part of each year's Annual Report to describe the results of the analysis and the annual results of the de-icing monitoring as these results pertain to BMP effectiveness and surface water impacts. The De-Icer Report will also include a summary of CIP activities, including progress on implementing the CIP and project effectiveness.
- Instances of noncompliance that may significantly endanger health or the environment will be reported to the Lahontan RWQCB per the requirements of Section 9.3.

10.2.2 California Department of Transportation District 3 Master Plan

District 3 will implement these requirements in a manner determined by a master plan process. The Department partnered with municipalities, counties, drainage districts and other local and/or regional agencies in the Lake Tahoe Hydrologic Basin to develop a master plan. This plan identifies the criteria for site-specific BMP selection, the availability of rights-of-way for construction of treatment controls, the scheduling of construction, traffic control, coordination with other projects and a priority listing for retrofit projects.

10.3 CALIFORNIA DEPARTMENT OF TRANSPORTATION DISTRICT 7 (Los Angeles)

In 1995, the Department responded to a citizen suit and began a process of defining and implementing location-specific storm water management activities in the major metropolitan area

of District 7. As a result of continuing negotiations with the court and plaintiffs, certain storm water management requirements and activities that are employed in District 7 may differ from those used in the other Districts and may change during the term of the Permit.

10.4 CALIFORNIA DEPARTMENT OF TRANSPORTATION DISTRICT 9 (Bishop)

District 9 will implement the following location-specific storm water management practices:

- For new construction or major reconstruction of existing facilities, a storm water/urban runoff collection, treatment and/or infiltration disposal facility will be installed and maintained for discharge of storm water runoff from all impervious surfaces generated by the 20-year, one-hour design storm within the Mammoth Creek Hydrologic Unit above 7,000-foot elevation (one inch of rain). If site conditions do not allow for adequate on-site disposal, all site runoff must be treated, where feasible, to meet applicable effluent limits and/or receiving water limitations specified in the basin plan. Runoff in excess of the design storm and generated by the facility or within the project site will only be discharged to a storm drain or stabilized drainage adequate to convey the 100-year 24-hour flow. If it is not feasible either to accommodate on-site disposal or treat runoff to meet applicable water quality standards, then traction sand trap devices shall be provided where feasible.
- For the portions of Mono and Inyo Counties within the Lahontan Region and above 5,000 feet in elevation (unless a variance has been granted by the Executive Director of the Lahontan RWQCB), no vegetation shall be removed nor ground surface conditions disturbed between October 15 of any year and May 15 of the following year, except: 1) in emergency situations where public health or welfare is threatened; 2) for regrading existing shoulder widths when there is neither snow on the ground nor an immediate threat of precipitation; 3) when there is no soil disturbance, or appropriate storm water runoff and erosion control measures are in place; and 4) when cleaning out ditches or culverts or filling in drop-off sections when appropriate storm water runoff and erosion control measures are in place.
- Within the Mammoth Creek Hydrologic Unit, the Department will participate in early project design consultation. The Department will submit an SWPPP/WPCP for RWQCB staff review and approval no latter than 30 days prior to beginning construction activities, and RWQCB's proposed modifications will be included within the plans prior to beginning construction activities.

10.5 CALIFORNIA DEPARTMENT OF TRANSPORTATION DISTRICT 10 (Stockton)

District 10 will implement the following location-specific storm water management practices:

- For new construction or major reconstruction of existing facilities, a storm water/urban runoff collection, treatment and/or infiltration disposal facility will be installed and maintained for discharge of storm water runoff from all impervious surfaces generated by the 20-year, one-hour design storm within the East Fork Carson River and West Fork Carson River Hydrologic Units (one inch of rain). If site conditions do not allow for adequate on-site disposal, all site runoff must be treated, where feasible, to meet applicable effluent limits and/or receiving water limitations specified in the basin plan. Runoff in excess of the design storm and generated by the facility or within the project site will only be discharged to a storm drain or stabilized drainage adequate to convey the 100-year 24-hour flow. If it is not feasible to either accommodate on-site disposal or treat runoff to meet applicable water quality standards, then traction sand trap devices shall be provided where feasible.
- Within the East Fork Carson River and West Fork Carson River Hydrologic Units (unless a variance has been granted by the Executive Director of the Lahontan RWQCB), no vegetation shall be removed nor ground surface conditions disturbed between October 15 of any year and May 15 of the following year, except: 1) in emergency situations where public health or welfare is threatened; 2) for regrading existing shoulder widths when there is neither snow on the ground nor an immediate threat of precipitation; 3) when there is no soil disturbance, or appropriate storm water runoff and erosion control measures are in place; and 4) when cleaning out ditches or culverts or filling in drop-off sections when appropriate storm water runoff and erosion control measures are in place.

10.6 CALIFORNIA DEPARTMENT OF TRANSPORTATION DISTRICT 11 (San Diego)

In late 1996, the Department responded to a joint lawsuit by EPA and citizen groups and began a process of defining and implementing location-specific storm water management activities in those portions of District 11 that lie within San Diego County and are under the jurisdiction of the San Diego RWQCB.

District 11 will implement the following location-specific storm water management practices:

- The District is responsible for ensuring that a Notice of Construction is submitted to the San Diego RWQCB at least 30 days prior to the start of construction for projects that require a WPCP, regardless of the size of the project. The District will also ensure that a Notice of Completion is submitted to the San Diego RWQCB upon completion of construction and stabilization of the site.
- The IC/ID Program includes procedures for the detection and reporting of IC/IDs identified via 1) the Department's field personnel; 2) dry weather field screening results; 3) follow-up on public complaints; or 4) other means. Procedures for

conducting follow-up investigations of reported IC/IDs to identify the source have been developed. All identified IC/IDs will be eliminated as expeditiously as possible.

- The Drain Inlet Inspection and Cleaning Program will be accomplished in accordance with the requirements specified in the Consent Decree.
- The Department will annually update on or before October 1 an FPPP for all maintenance facilities within San Diego County.
- The Department will participate in a regionwide Public Education Program called "Think Blue," which will be conducted in conjunction with other municipal entities. This program will entail research, public education strategy and mass media advertising. "Think Blue" is designed to generate awareness and action among San Diego residents to prevent the sources of storm drain pollution that have a severe impact on San Diego's environment, life style and economy. Community and environmental organizations will provide ongoing review and input for the "Think Blue" program.
- The Department has developed a Program Evaluation Protocol that serves to assess compliance with the implementation of BMPs within the Department's functional units: Project Delivery, Construction and Maintenance. Specific mechanisms that serve as a basis to ensure/monitor compliance are outlined below.

  Project Delivery

  – Projects are reviewed by the NPDES Unit prior to project completion and advertisement to verify appropriateness of selected measures.
  – Periodic storm water updates are provided to Project Delivery staff via the NPDES Design Coordinator.
  – Training for new hires, training schedules and course evaluations are reviewed periodically as part of the Storm Water Coordinator meetings conducted bi-weekly to ensure that training materials and course content are adequate and meet goals.

  Construction

  – Compliance reviews are conducted for the Department's construction projects; these reviews provide compliance assistance to field personnel. Rating criteria are specified in the ACCRP.
  – The Department periodically reviews feedback from the compliance reviews to identify and compile information about commonly encountered problems (including conflicts between implementation of storm water controls and current standard practices and policies), solutions, and suggestions from field personnel. This information forms part of the continuous improvement process for management policies and BMPs.

- Annual review of Noncompliance Reports is conducted.
- Annual review is conducted of stop-work orders and other enforcement mechanisms utilized by field personnel related to storm water compliance.
- Training for new hires, training schedules and course evaluations are reviewed periodically as part of the Storm Water Coordinator meetings conducted bi-weekly to ensure that training materials and course content are adequate and meet goals.

Maintenance

- Annual review is conducted of the FPPP for maintenance facilities within San Diego County.
- Maintenance Supervisors conduct monthly inspections of their maintenance facilities to ensure proper implementation of BMPs and timely and adequate corrective actions if deficiencies are noted.
- Training for new hires, training schedules and course evaluations are reviewed periodically as part of the Storm Water Coordinator meetings conducted bi-weekly to ensure that training materials and course content are adequate and meet goals.

General

- Bi-weekly meetings between the various NPDES Coordinators are held to provide solutions to issues that require immediate resolution. Also, these meetings provide a venue for sharing ideas between functional units.

A.1 DISTRICT 1

A.1.1 General

District 1 encompasses primarily the north coast of California. It includes all of Del Norte, Humboldt, Mendocino and Lake Counties, and the western portions of Siskiyou and Trinity Counties.

A.1.2 District 1 Facilities

District 1 boundaries, freeways and state highways are shown in Figure A-1. There are 1,527 centerline kilometers (948 miles) of freeway and state highway in District 1. District 1 freeways and highways are subject to an average of 4.9 million vehicle miles of travel each day. Names and locations of other Caltrans facilities, including maintenance stations, park-and-ride lots, roadside rest areas, vista points, toll plazas and inspection stations are listed in Table A-1.

Portions of District 1 lie within the areas that are the responsibility of two California Regional Water Quality Control Boards (RWQCBs): the North Coast RWQCB and the Central Valley RWQCB. The relationship between District 1 and RWQCB boundaries is shown in Figure A-2.

Most of the District 1 facilities lie within watersheds that drain directly to the Pacific Ocean. The largest of these watersheds are the Smith, Klamath and Eel River drainages (North Coast Region). A small portion of the District in Lake County lies within the Sacramento River watershed, which drains to the Pacific Ocean via San Francisco Bay (Central Valley Region). The RWQCBs are divided into hydrologic units (HUs) as part of the regional basin plans. The RWQCB HUs located in District 1 are shown in Figure A-2 and are listed in Table A-2.

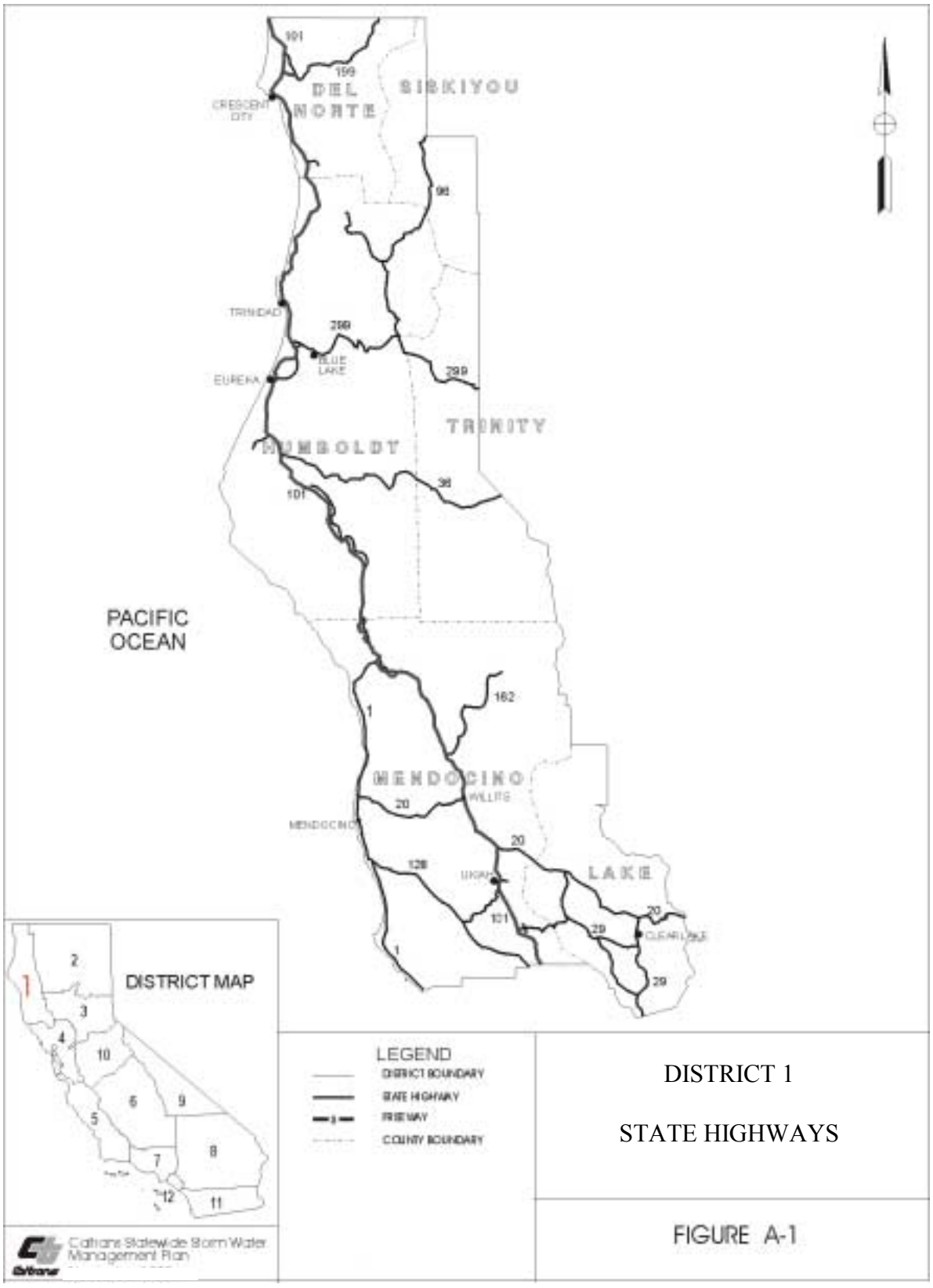

101
199
DEL NORTE
SISKIYOU
CRESCENT CITY
96
TRINIDAD
299
BLUE LAKE
EUREKA
HUMBOLDT
TRINITY
36
101
PACIFIC OCEAN
162
1
MENDOCINO
WILLITS
MENDOCINO
20
128
LAKE
101
29
CLEARLAKE
DISTRICT MAP
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
COUNTY BOUNDARY
DISTRICT 1
STATE HIGHWAYS
FIGURE A-1
Caltrans Statewide Storm Water Management Plan

TABLE A-1: DISTRICT 1 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS				
101	HUM	77.3	Eureka	District 1 Office
101	MEN	27.4	Ukiah	Highway Maintenance
169	HUM	31.1	Weitchpec	Leased to Yurok tribe
101	HUM	120.8	Orick	District 4 Bridge Crew
101	DN	0.6	Klamath	Leased to Yurok tribe
128	MEN	28.0	Boonville	Highway Maintenance
36	HUM	26.2	Bridgeville	Highway Maintenance
20	LAK	28.4	Clear Lake Oaks	Highway Maintenance
101	DN	27.0	Crescent City	Highway Maintenance
101	HUM	83.4	Eureka	Highway Maintenance
1	MEN	62.0	Fort Bragg	Highway Maintenance
101	HUM	59.5	Fortuna	Highway Maintenance
101	HUM	11.5	Garberville	Highway Maintenance
199	DN	28.2	Idlewild	Highway Maintenance
271	MEN	7.2	Leggett	Highway Maintenance
1	MEN	20.4	Manchester	Highway Maintenance
96	HUM	38.9	Orleans	Highway Maintenance
101	MEN	27.4	Ukiah	Highway Maintenance
96	HUM	0.6	Willow Creek	Highway Maintenance
101	MEN	45.9	Willits	Highway Maintenance
29	LAK	45.1	Lakeport	Highway Maintenance
299	HUM	34.1	Berry Summit	Sand and Salt Storage
299	HUM	12.4	Pine Creek	Sand and Salt Storage
101	MEN	82.3	Rattlesnake Creek	Sand and Salt Storage
101	DN	131.7	Redwood Bypass	Sand and Salt Storage
VISTA POINTS				
29	LAK	39.8		Vista Point
29	LAK	41.4	George G. Hoberg	Vista Point
1	MEN	81.2	Westport-Union Landing	Vista Point
1	MEN	49.5	Brewery Gulch	Vista Point
1	MEN	25.2		Vista Point
101	HUM	73.7	Harold G. Larsen	Vista Point
101	HUM	94.4	McKinleyville	Vista Point
299	HUM	19.5	Lord-Ellis Summit	Vista Point
299	HUM	28.3	Berry Summit	Vista Point
96	HUM	8.7	Hoopa	Vista Point
101	DN	22.0	Crescent City	Vista Point
1	MEN	74.3		Vista Point
101	DN	13.3	Wilson Creek	Vista Point
101	HUM	46.7	Greenlaw	Vista Point
1	MEN	50.6	Big River	Vista Point
1	MEN	54.9	Caspar Creek	Vista Point

TABLE A-1: DISTRICT 1 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
COMMERCIAL VEHICLE ENFORCEMENT FACILITIES				
20	MEN	28.7	Two Rock	Eastbound (EB)
101	MEN	48.7	Willits	Southbound (SB)
101	HUM	97.3	Little River	SB
299	HUM	R7.4	Buckhorn	Westbound (WB)
SAFETY ROADSIDE REST AREAS				
101	MEN	61.8	Irvine Lodge	7.9 mi. S of Laytonville
101	MEN	58.9	Moss Cove	10.5 mi. S of Laytonville
101	MEN	82.5	Empire Camp	2.5 mi. S of Cummings
	HUM	R102.9	Trinidad	0.5 mi. S of Patricks Point UC; northbound (NB) & SB
199	DN	33.4	Collier Tunnel	3 mi. S of Oregon State Line
PARK AND RIDE FACILITIES				
175	LAKE	27.8	Middletown	Santa Clara & Graham Streets
101	HUM	59.9	Fortuna	SE Corner Kenmar Road IC
101	HUM	79.3	Eureka	NW Corner 6th & S Streets
29	LAKE	39.8	Lakeport	0.3 mi S Jct. Rtes 29 & 175
101	HUM	100.7	Trinidad West	NW corner Trindad IC
101	HUM	100.7	Trinidad East	NE corner Trinidad IC
101	HUM	74.8	Elk River	NW corner Elk River IC
TOLL ROAD AND TOLL BRIDGE PLAZAS				
None.				

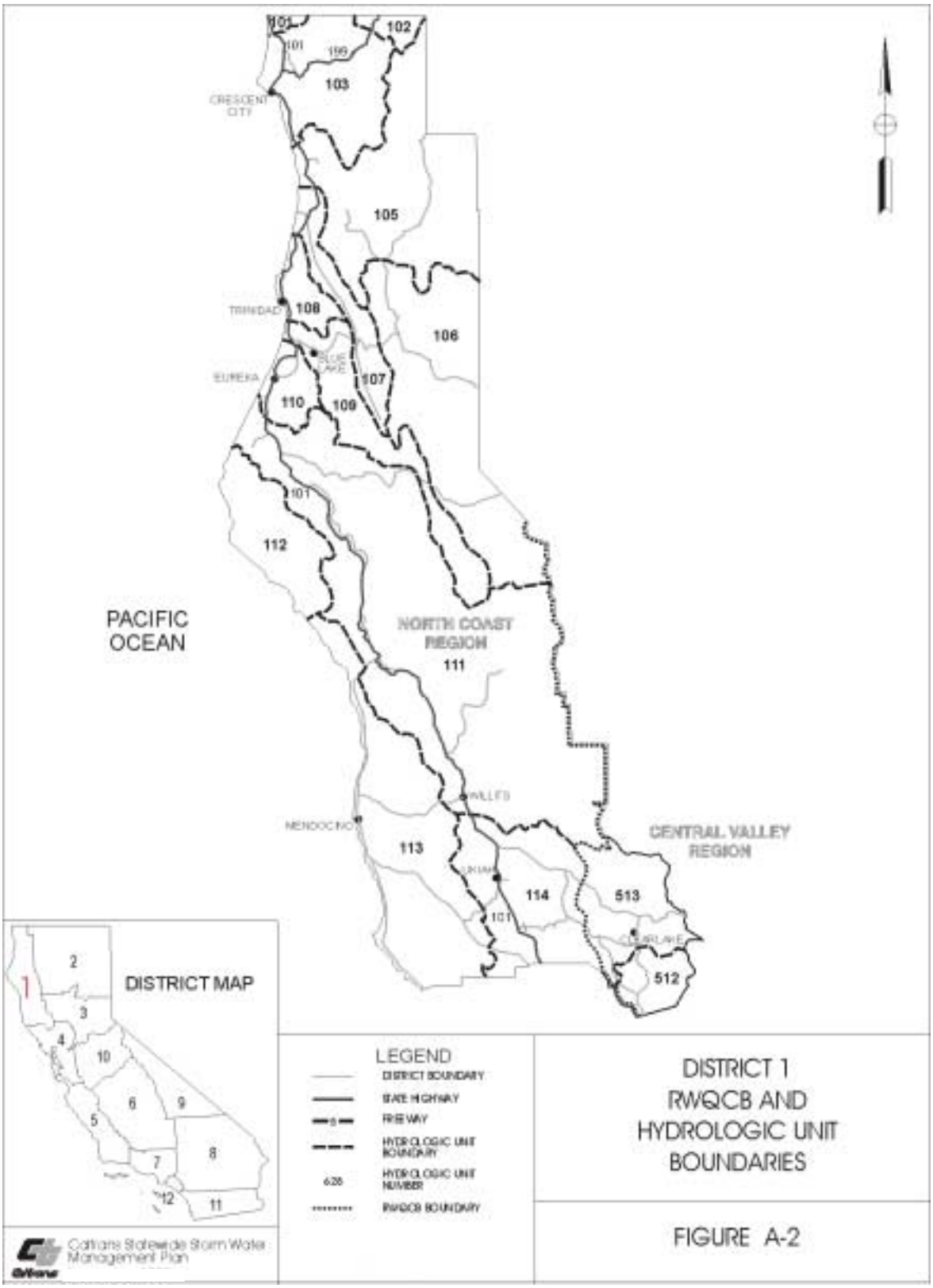

101
102
101
199
103
CRESCENT CITY
105
TRINIDAD
108
106
BLUE LAKE
EUREKA
107
110
109
101
112
PACIFIC OCEAN
NORTH COAST REGION
111
UKIAH
MENDOCINO
113
CENTRAL VALLEY REGION
114
513
101
CLEARLAKE
512
DISTRICT MAP
1
2
3
4
10
6
9
5
8
7
12
11
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
HYDROLOGIC UNIT BOUNDARY
6.28
HYDROLOGIC UNIT NUMBER
RWQCB BOUNDARY
DISTRICT 1
RWQCB AND
HYDROLOGIC UNIT
BOUNDARIES
FIGURE A-2
Caltrans Statewide Storm Water Management Plan
Caltrans

TABLE A-2: DISTRICT 1 - HYDROLOGIC UNIT LIST

North Coast Region (1)	
101	Winchuck River HU
102	Rogue River HU
103	Smith River HU
105	Klamath River HU
106	Trinity River HU
107	Redwood Creek HU
108	Trinidad HU
109	Mad River HU
110	Eureka Plain HU
111	Eel River HU
112	Cape Mendocino HU
113	Mendocino Coast HU
114	Russian River HU
Central Valley Region (5)	
512	Putah Creek HU
513	Cache Creek HU

A.2 DISTRICT 2

A.2.1 General

District 2 covers the northeastern portion of California from the northern end of the Sacramento Valley to the Oregon border. It includes all of Modoc, Shasta, Lassen, Tehama and Plumas Counties, the eastern portions of Siskiyou and Trinity Counties, and a small portion of Butte County.

A.2.2 District 2 Facilities

District 2 boundaries, freeways and state highways are shown in Figure A-3. There are 2,820 centerline kilometers (1,752 miles) of freeway and state highway in District 2. District 2 freeways and highways are subject to an average of 7.8 million vehicle miles of travel each day. Names and locations of other Caltrans facilities, including maintenance stations, park-and-ride lots, roadside rest areas, vista points, toll plazas and inspection stations are listed in Table A-3.

Portions of District 2 lie within the areas that are the responsibility of three RWQCBs: the North Coast RWQCB, the Central Valley RWQCB and the Lahontan RWQCB. The relationship between District 2 and RWQCB boundaries is shown in Figure A-4.

Most of District 2 lies within the Sacramento River watershed that ultimately drains to the Pacific Ocean via San Francisco Bay (Central Valley Region). The northwestern portion of the District is in watersheds that drain directly to the Pacific Ocean, primarily the Klamath and Eel River drainages (North Coast Region). The eastern edge of the District is in the Great Basin Physiographic Province, which does not drain to the ocean (Lahontan Region). The RWQCBs are divided into HUs as part of the regional basin plans. The RWQCB HUs located in District 2 are shown in Figure A-4 and are listed in Table A-4.

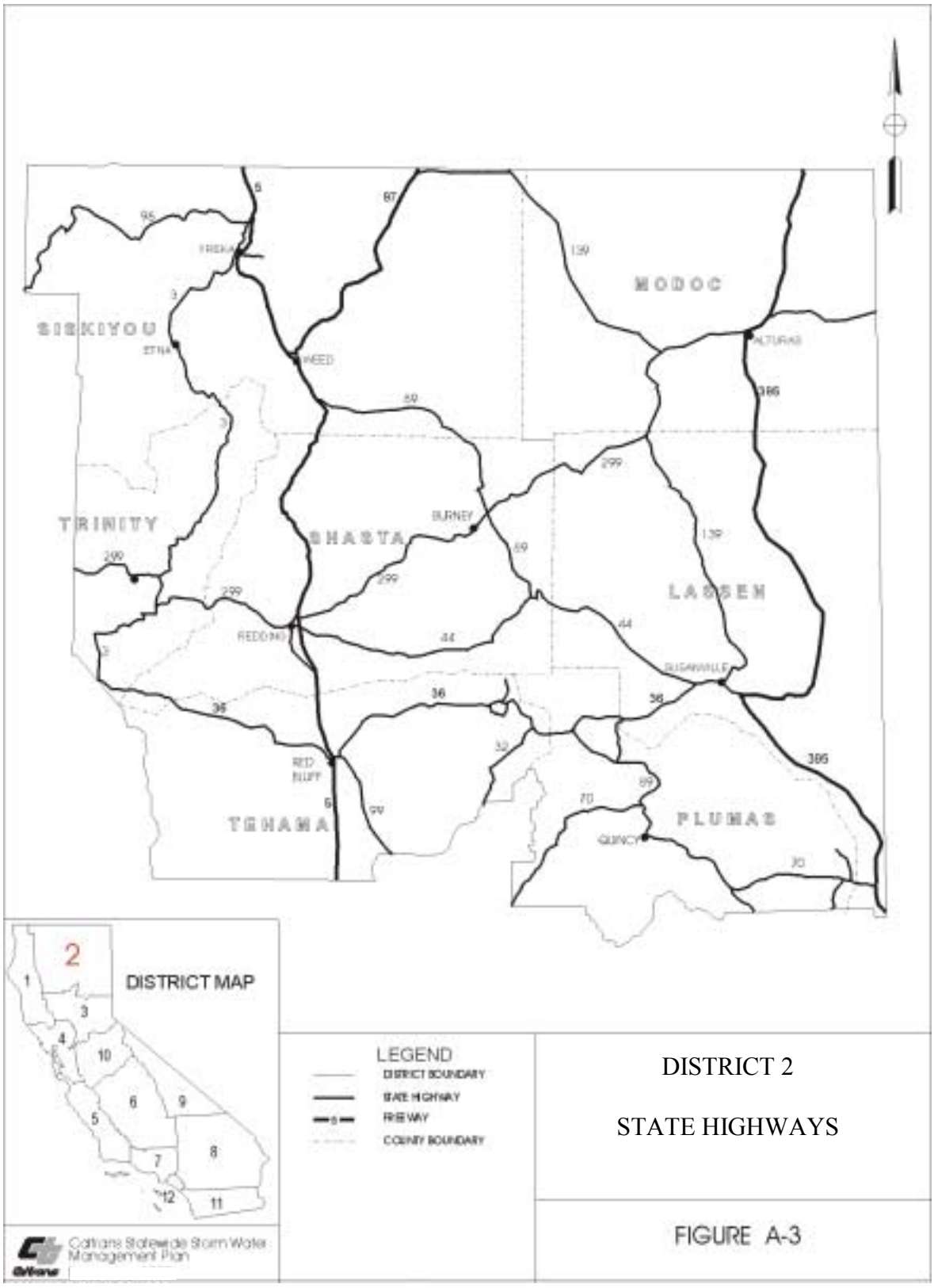

MODOC
SISKIYOU
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
ETNA
WEED
BURNEY
REDDING
RED BLUFF
QUINCY
SUSANVILLE
ALTURAS
DISTRICT MAP
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
COUNTY BOUNDARY
DISTRICT 2
STATE HIGHWAYS
FIGURE A-3
Caltrans Statewide Storm Water Management Plan

TABLE A-3: DISTRICT 2 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS				
5	SHA	014.5	Redding	Other Maintenance
36	THE	044.4	Red Bluff	Landscape Maintenance
5	SHA	014.5	Redding	Landscape Maintenance
5	SIS	047.4	Yreka	Landscape Maintenance
299	MOD	025.6	Adin	Highway Maintenance
395	MOD	023.0	Alturas	Highway Maintenance
70	PLU	081.6	Beckwourth	Highway Maintenance
299	SHA	069.2	Buckhorn	Highway Maintenance
299	SHA	075.6	Burney	Highway Maintenance
36	PLU	006.5	Chester	Highway Maintenance
3	SIS	019.7	Etna	Highway Maintenance
5		052.9	Gibson	Highway Maintenance
97	SIS	020.2	Grass Lake	Highway Maintenance
44	SHA	062.5	Hat Creek	Highway Maintenance
3	TRI	006.2	Hayfork	Highway Maintenance
36	THE	082.2	Mineral	Highway Maintenance
5	SIS	006.1	Mt Shasta	Highway Maintenance
139	MOD	044.9	Newell	Highway Maintenance
36	SHA	008.7	Platina	Highway Maintenance
70	BUT	042.1	Pulga	Highway Maintenance
70	PLU	045.3	Quincy	Highway Maintenance
36	THE	044.4	Red Bluff	Highway Maintenance
5	SHA	014.5	Redding	Highway Maintenance
96	SIS	060.8	Seiad Valley	Highway Maintenance
36	LAS	026.0	Susanville	Highway Maintenance
3	TRI	059.5	Trinity Center	Highway Maintenance
299	TRI	051.2	Weaverville	Highway Maintenance
5	SIS	047.4	Yreka	Highway Maintenance
89	SIS	11.400	Bartle	Sand and Salt Storage
44		14.500	Bogard	Sand and Salt Storage
299	SHA	80.200	Burney Junction	Sand and Salt Storage
299	MOD	20.300	Canby	Sand and Salt Storage
89	PLU	29.300	Canyon Dam	Sand and Salt Storage
5	SHA	66.900	Castella	Sand and Salt Storage
299	MOD	50.200	Cedar Pass	Sand and Salt Storage
36		98.700	Deer Creek	Sand and Salt Storage
97	SIS	49.800	Dorris	Sand and Salt Storage
36		10.400	Fredonyer	Sand and Salt Storage
139		32.200	Grasshoper	Sand and Salt Storage
70		33.000	Greenville wye	Sand and Salt Storage
70	LAS	3.600	Hallelujah Jct.	Sand and Salt Storage
299		68.200	Hatchet Mtn.	Sand and Salt Storage
5	SIS	68.328	Hilt	Sand and Salt Storage
44	LAS	36.900	Junction 36/44	Sand and Salt Storage
70		55.200	Lees Summit	Sand and Salt Storage
89	SIS	24.100	McCloud	Sand and Salt Storage

TABLE A-3: DISTRICT 2 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS (continued)				
44	SHA	33.900	Shingletown	Sand and Salt Storage
395	LAS	115.200	Termo	Sand and Salt Storage
299	TRI	51.200	Weaverville	Sand and Salt Storage
5	SIS	20.200	Weed	Sand and Salt Storage
70		70.700	Willow Creek	Sand and Salt Storage
273		16.000	Special Crews Office	Special Crews
299	SHA	69.700	Buckhorn	Satellite
5		37.500	Salt Creek	Satellite
VISTA POINTS				
5	SHA	62.5	Castella	Vista Point
5	SIS	52.0	Yreka	Vista Point
3	TRI	37.9	Trinity Lake (USFS)	Vista Point
3	TRI	62.8	North Shore	Vista Point
44		57.5	Panorama Point	Vista Point
97	SIS	19.1	Grass Lake	Vista Point
139	LAS	23.0	Eagle Lake	Vista Point
151	SHA	1.47	Shasta Dam	Vista Point
299		69.7	Hatchet Mountain	Vista Point
299	SHA	89.56	Pit River	Vista Point
299	MOD	54.9	Cedarville	Vista Point
36		72.6	Battle Creek	Vista Point
36		9.8	South Fork Mountain Summit	Vista Point
299	SHA	16.5	Whiskeytown	Vista Point
14 7	PLU	0.4	Lake Almanor	Vista Point
395	MOD	52.1	Goose Lake	Vista Point
299	MOD	50.3	Cedar Pass	Vista Point
299	MOD	52.0	Cedar Canyon	Vista Point
161	SIS	8.8	Lower Klamath Wildlife Refuge	Vista Point
89	SIS	15.4	McCloud	Vista Point
COMMERCIAL VEHICLE ENFORCEMENT FACILITIES				
5	SHA	40.8	Cottonwood	Southbound (SB)
5	SHA	40.6	Cottonwood	Northbound (NB)
5	SHA	R7.2	Durnsmuir Grade	SB
70	PLU	33.0	Keddie	Westbound (WB)
299	SHA	12.6	Whiskeytown	Eastbound (EB)
SAFETY ROADSIDE REST AREAS				
299	TRI	R3.6	Salyer	3 mi. E of Salyer
299	TRI	56.9	Moon Lim Lee	5 mi. E of Weaverville
5	TEH	R10.3	Lt. John C. Helmick	NB & SB
5	TEH	35.0	Herbert S. Miles	4.4 mi. N of Red Bluff; NB & SB
5	SHA	R31.1	O'Brien	9 mi. N of Project City
5	SHA	R43.1	Lakehead	0.9 mi. N of Lakehead OC
5	SIS	R25.6	Weed Airport	6 mi. N of Weed; NB & SB
5	SIS	R58.6	Randolph C. Collier	2.5 mi. N of Route 96

TABLE A-3: DISTRICT 2 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
SAFETY ROADSIDE REST AREAS (continued)				
395	MEN	82.5	Honey Lake	7.7 mi. N of Milford
395	LAS	96.5	Secret Valley	12 mi. S of Ravendale
97	SIS	21.8	Grass Lake	19.8 mi. N of Weed
70	PLU	49.8	Massack	6.5 mi. E of Quincy
70	PLU	R79.1	L. T. Davis	3 mi. E of Portola
36	PLU	R12.8	Lake Almanor	4.3 mi. E of Chester
44	SHA	34.7	Shingletown	3.1 mi. E of Shingletown
44	LAS	14.5	Bogard	28 mi. NW of Susanville
299	SHA	60.6	Hillcrest	3.9 mi. E of Montgomery CB
PARK AND RIDE FACILITIES				
395	LAS	52.6	Janesville	0.3 mi N County Road A3
89	SIS	34.3	Mt. Shasta	SE corner Azalea Road & Route 89
5	TEH	41.5	Cottonwood	E side Bowman Road IC
44	SHAS	7.0	Deschutes Road	NE corner Deschutes Road & Route 44
70	PLUM	66.6	Blairsden	N side Jct. Route 70 & Route 89
44	SHAS	24.8	Black Butte Road	S side Black Butte Road & Route 44
44	SHAS	31.7	Shingletown	N side Wilson Hill Road & Route 44
TOLL ROAD AND TOLL BRIDGE PLAZAS				
None.				

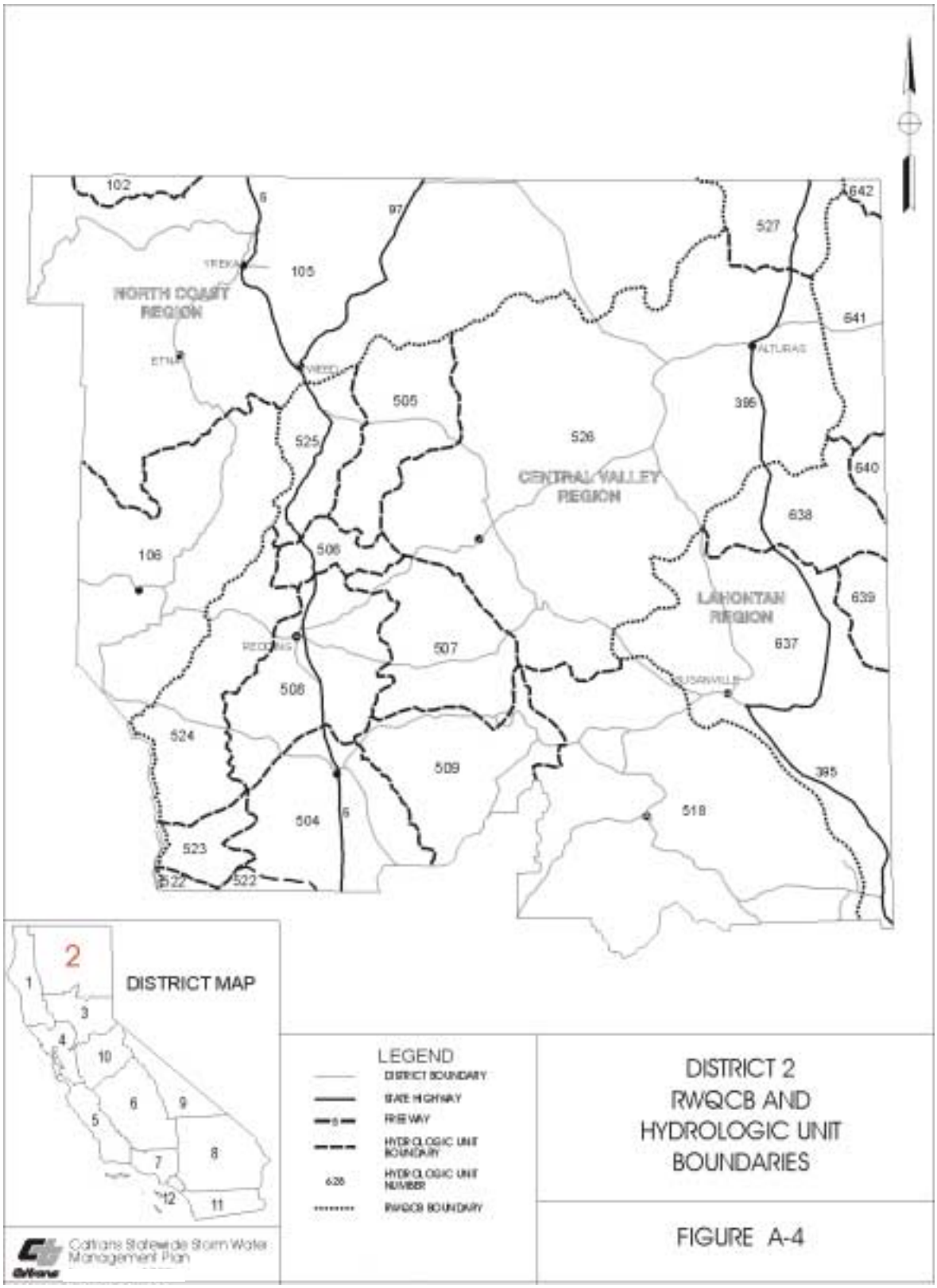

102
6
97
642
527
105
NORTH COAST REGION
641
ETNA
ALTURAS
505
396
525
526
CENTRAL VALLEY REGION
640
638
108
506
LAHONTAN REGION
639
507
637
506
524
509
395
504
6
518
523
522
522
2
DISTRICT MAP
1
3
4
10
6
9
5
8
7
12
11
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
HYDROLOGIC UNIT BOUNDARY
HYDROLOGIC UNIT NUMBER
RWQCB BOUNDARY
DISTRICT 2
RWQCB AND
HYDROLOGIC UNIT
BOUNDARIES
FIGURE A-4
Caltrans Statewide Storm Water Management Plan

TABLE A-4: DISTRICT 2 - HYDROLOGIC UNIT LIST

North Coast Region (1)	
102	Rogue River HU
105	Klamath River HU
106	Trinity River HU
Central Valley Region (5)	
504	Tehama HU
505	McCloud River HU
506	Shasta Dam HU
507	Whitmore HU
508	Redding HU
509	Eastern Tehama HU
518	Feather River HU
522	Stony Creek HU
523	Ball Mountain HU
524	Shasta Bally HU
525	Upper Sacramento HU
526	Pitt River HU
527	Lakeview HU
Lahontan Region (6)	
637	Susanville HU
638	Madeline Plains HU
639	Smoke Creek HU
640	Duck Flat HU
641	Surprise Valley HU
642	Cow Head Lake HU

A.3 DISTRICT 3

A.3.1 General

District 3 is located in the Sacramento Valley and the Sierra Nevada to the east of the Valley. It includes all of Glenn, Colusa, Yolo, Sutter, Sacramento, Yuba, Sierra, Nevada, Placer and El Dorado Counties, and most of Butte County.

A.3.2 District 3 Facilities

District 3 boundaries, freeways and state highways are shown in Figure A-5. All of Sacramento County and the Tahoe Basin (California side of Lake Tahoe) are within District 3 jurisdiction. There are 2,485 centerline kilometers (1,544 miles) of freeway and state highway in District 3. District 3 freeways and highways are subject to an average of 27.6 million vehicle miles of travel each day. Names and locations of other Caltrans facilities, including maintenance stations, park-and-ride lots, roadside rest areas, vista points, toll plazas and inspection stations are listed in Table A-5.

Portions of District 3 lie within the areas that are the responsibility of two RWQCBs: the Central Valley RWQCB and the Lahontan RWQCB. The relationship between District 3 and RWQCB boundaries is shown in Figure A-6.

Most of District 3 lies within the Sacramento River watershed that ultimately drains to the Pacific Ocean via San Francisco Bay (Central Valley Region). The eastern edge of the District is in the Great Basin Physiographic Province, which does not drain to the ocean (Lahontan Region). The RWQCBs are divided into HUs as part of the regional basin plans. The RWQCB HUs located in District 3 are shown in Figure A-6 and listed in Table A-6.

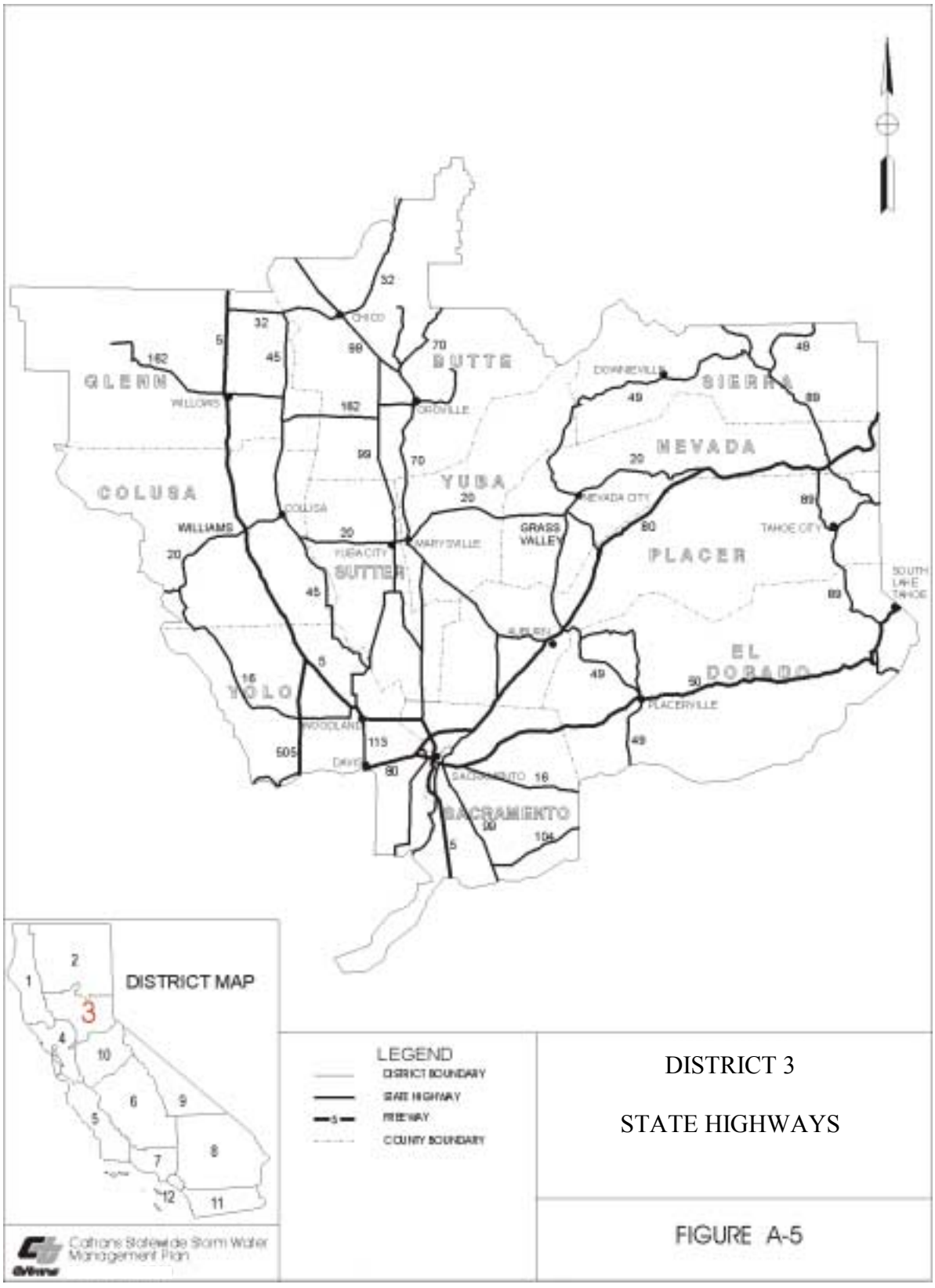

GLENN
BUTTE
SIERRA
NEVADA
COLUSA
YUBA
PLACER
SUTTER
YOLO
EL DORADO
SACRAMENTO
WILLIAMS
GRASS VALLEY
NEVADA CITY
TAHOE CITY
PLACERVILLE
SOUTH LAKE TAHOE
DISTRICT MAP
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
COUNTY BOUNDARY
DISTRICT 3
STATE HIGHWAYS
FIGURE A-5
Caltrans Statewide Storm Water Management Plan

TABLE A-5: DISTRICT 3 FACILITIES

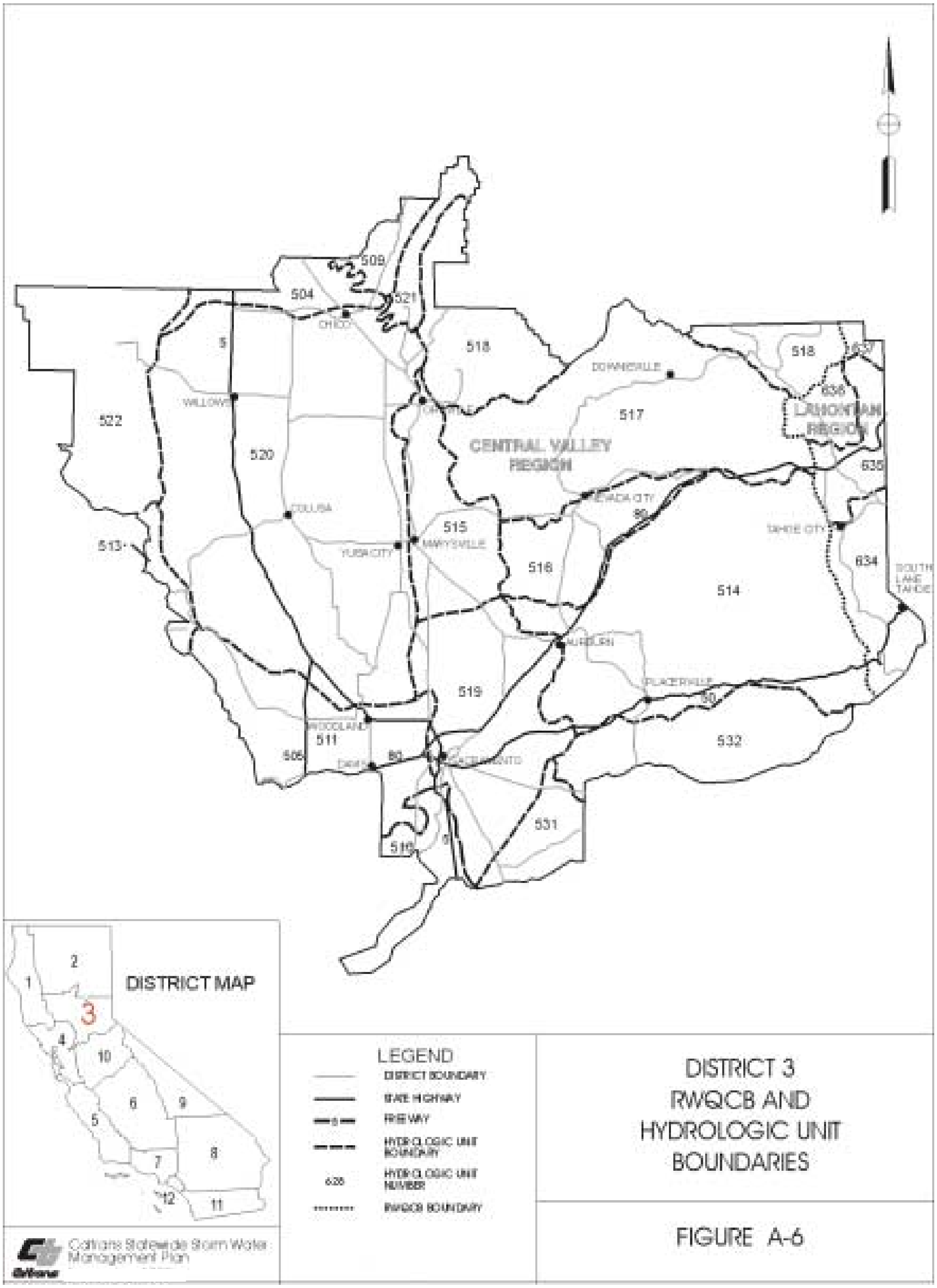
RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS				
20	YUB	1.5	Marysville	District 3 Office
99	SAC	22.1	Fruitridge	Landscape Maintenance
20	YUB	9.2	Marysville 12th St	Landscape Maintenance
49	PLA	4.7	Auburn	Highway Maintenance
99	BUT	30.4	Chico	Highway Maintenance
20	COL	30.0	Colusa	Highway Maintenance
49	SIE	19.8	Downieville	Highway Maintenance
99	SAC	12.8	Elk Grove	Highway Maintenance
16	YOL	28.4	Esparto	Highway Maintenance
80	NEV	0.1	Kingvale	Highway Maintenance
50	ED	48.7	Kyburz	Highway Maintenance
89	ED	8.2	So Lake Tahoe	Highway Maintenance
70	YUB	13.2	Marysville	Highway Maintenance
20	NEV	15.9	Nevada City/North Region	Highway Maintenance
80	SAC	5.2	Northgate South Region	Highway Maintenance
50	ED	18.6	Placerville	Highway Maintenance
80	SAC	3.1	Roseville	Highway Maintenance
	SAC	0.0	Sacramento	Highway Maintenance
89	SIE	14.7	Sierraville	Highway Maintenance
50	SAC	0.0	Sunrise MS	Highway Maintenance
89	PLA	8.9	Tahoe City	Highway Maintenance
267	NEV	0.6	Truckee	Highway Maintenance
80	YOL	0.92	West Sacramento	Highway Maintenance
80	PLA	50.7	Whitmore	Highway Maintenance
20	COL	21.9	Williams	Highway Maintenance
113	YOL	11.5	Woodland	Highway Maintenance
5	GLE	10.4	Willows	Highway Maintenance
80	NEV	5.10	Castle Peak	Sand and Salt Storage
80	PLA	63.40	Cisco	Sand and Salt Storage
80	NEV	27.40	Floriston	Sand and Salt Storage
80	ED	42.10	Gold Run	Sand and Salt Storage
50		38.10	Riverton	Sand and Salt Storage
51	SAC	1.70	South Bridge Crew	Special Crews
	SAC	0.0	South Electric Shop	Special Crews
20	YUB	1.60	Yuba Street	Special Crews
174		0.60	Colfax	Special Crews
99	SAC	23.10	12th Avenue	Satellite
5		23.0	2nd Street	Satellite
80	SAC	0.30	3rd Street	Satellite
99	SAC	20.90	47th Avenue	Satellite
80		3.90	E Street	Satellite
99		34.70	East Avenue	Satellite
50	ED	66.70	Echo Summit	Satellite
20	NEV	15.70	Empire Street	Satellite
20	NEV	45.70	Junction 80/20	Satellite

TABLE A-5: DISTRICT 3 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS (continued)				
99	SUT	31.10	Onstott Road	Satellite
5	SAC	24.40	Richards Boulevard	Satellite
174		0.60	Colfax	Satellite
VISTA POINTS				
80	PLA	54.5	Emigrant Gap	Vista Point
80	NEV	8.3	Donner Summit	Vista Point
80	NEV	9.7	Donner Summit	Vista Point
49		45.6	Sattley	Vista Point
20		31.7	Washington Road	Vista Point
COMMERCIAL VEHICLE ENFORCEMENT FACILITIES				
50	SAC	27.1	Camino	Westbound (WB)
80	SAC	16.0	Antelope	WB
80	SAC	15.9	Antelope	Eastbound (EB)
80	NEV	18.8	Donner Pass	WB
SAFETY ROADSIDE REST AREAS				
5	SAC	34.1	Elkhorn	At Sacramento Metro Airport
5	YOL	R26.3	Dunnigan	0.5 mi. N of Dunnigan; Northbound (NB) & Southbound (SB)
5	COL	R24.3	Maxwell	2 mi. S of Maxwell; NB & SB
5	GLE	R14.6	Willows	2 mi. S of Artois; NB & SB
80	PLA	1.4/41.4	Gold Run	Between Sawmill & Gold Run OC; EB & WB
80	NEV	R5.6	Donner Summit	On Donner Pass; EB & WB
20	NEV	35.7	Alpha-Omega	4.1 mi. E of Washington Junction
PARK AND RIDE FACILITIES				
50		5.0	Cambridge Drive	At Cameron Dr IC
99	SAC	14.9	Sheldon	SE corner Sheldon Road N of Elk Grove
20	NEV	12.9	Grass Valley	Intersection of Rtes 49 & 174
49	PLAC	5.9	Atwood	Atwood Road & Route 49 N of Auburn
49	NEV	7.2	Lime Kiln	Lime Kiln Road & Route 49 S of Grass Valley
20	NEV	4.7	Pleasant Valley	Pleasant Valley Road & Route 20 W of Grass Valley
50	SAC	15.8	Hazel	Hazel Ave IC near Orangevale
49	NEV	1.6	Streeter	Streeter Road & Route 49 S of Grass Valley
99	SAC	3.5	Twin Cities	Twin Cities Road & Route 104 in Galt
70	BUTT	15.4	Oroville	NW corner Grand Avenue & Third Street
50	ED	12.2	Greenstone	Greenstone Road IC S of Placerville
193	PLAC	3.0	Sierra College Blvd	IC of Sierra College Blvd E and Lincoln
32	BUTT	10.3	Chico	First Street & Route 32

TABLE A-5: DISTRICT 3 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
PARK AND RIDE FACILITIES (continued)				
50	ED	8.6	Ponderosa	Ponderosa & E. Shingle Springs Rd.
50	ED	8.6	Ponderosa Rd. West	Ponderosa Rd. West
80	YOLO	9.2	Enterprise	SW corner Enterprise Dr near W Sacto.
80	PLAC	13.6	Newcastle	IC Newcastle Rd
80	PLAC	13.8	Indian Hills	Indian Hills Road & Newcastle Rd
20	NEV	6.3	Penn Valley	NE corner Penn Valley Road & Route 20
80	PLAC	3.7	Taylor Road	Taylor Road near Route 65 OC near Rocklin
99	SAC	33.4	Elkhorn	Elkhorn Blvd near Sacramento
193	ED	0.0	Cool	SE corner Route 193 & Route 49 in Cool
80	PLAC	3.1	Atlantic Street	NE corner Atlantic St in Roseville
16	SAC		Sunrise	Sunrise and Hwy 16
99	SAC		Calvine	Calvine Road IC SE Corner
99	SAC	12.76	Elk Grove	Near Stockton Blvd. & S of Elk Grove Blvd.
TOLL ROAD AND TOLL BRIDGE PLAZAS				
None.				



DISTRICT 3
RWQCB AND
HYDROLOGIC UNIT
BOUNDARIES

FIGURE A-6

TABLE A-6: DISTRICT 3 - HYDROLOGIC UNIT LIST

Central Valley Region (5)	
504	Tehama HU
509	Eastern Tehama HU
510	Sacramento Delta HU
511	Valley Putah - Cache HU
513	Cache Creek HU
514	American River HU
515	Marysville HU
516	Bear River HU
517	Yuba River HU
518	Feather River HU
519	Valley - American HU
520	Colusa Basin HU
521	Butte Creek HU
522	Stony Creek HU
531	North Valley Floor HU
532	Middle Sierra HU
Lahontan Region (6)	
634	Lake Tahoe HU
635	Truckee River HU
636	Little Truckee River HU
637	Susanville HU

A.4 DISTRICT 4

A.4.1 General

District 4 encompasses most of the San Francisco Bay Area. It includes all of Sonoma, Napa, Marin, Contra Costa, San Francisco, Alameda, San Mateo, Santa Clara and Solano Counties.

A.4.2 District 4 Facilities

District 4 boundaries, freeways and state highways are shown in Figure A-7. There are 2,329 centerline kilometers (1,447 miles) of freeway and state highway in District 4. District 4 freeways and highways are subject to an average of 75.3 million vehicle miles of travel each day. Names and locations of other Caltrans facilities, including maintenance stations, park-and-ride lots, roadside rest areas, vista points, toll plazas and inspection stations are listed in Table A-7.

Portions of District 4 lie within the areas that are the responsibility of four RWQCBs. Most of District 4 lies within the boundaries of the San Francisco Bay RWQCB. However, the eastern portions of the District in Napa, Solano and Alameda Counties lie within the boundaries of the Central Valley RWQCB. The northwest portion of the District lies within the North Coast RWQCB. The southern portion of the District lies within the Central Coast RWQCB. The relationship between District 4 and RWQCB boundaries is shown in Figure A-8.

Most of District 4 drains directly to San Francisco Bay or the Pacific Ocean (San Francisco Bay Region). The eastern edge of the District (eastern Napa, Contra Costa and Alameda Counties) lies in the Sacramento and San Joaquin watersheds (Central Valley Region). The RWQCBs are divided into HUs as part of the regional basin plans. The RWQCB HUs located in District 4 are shown in Figure A-8 and listed in Table A-8.

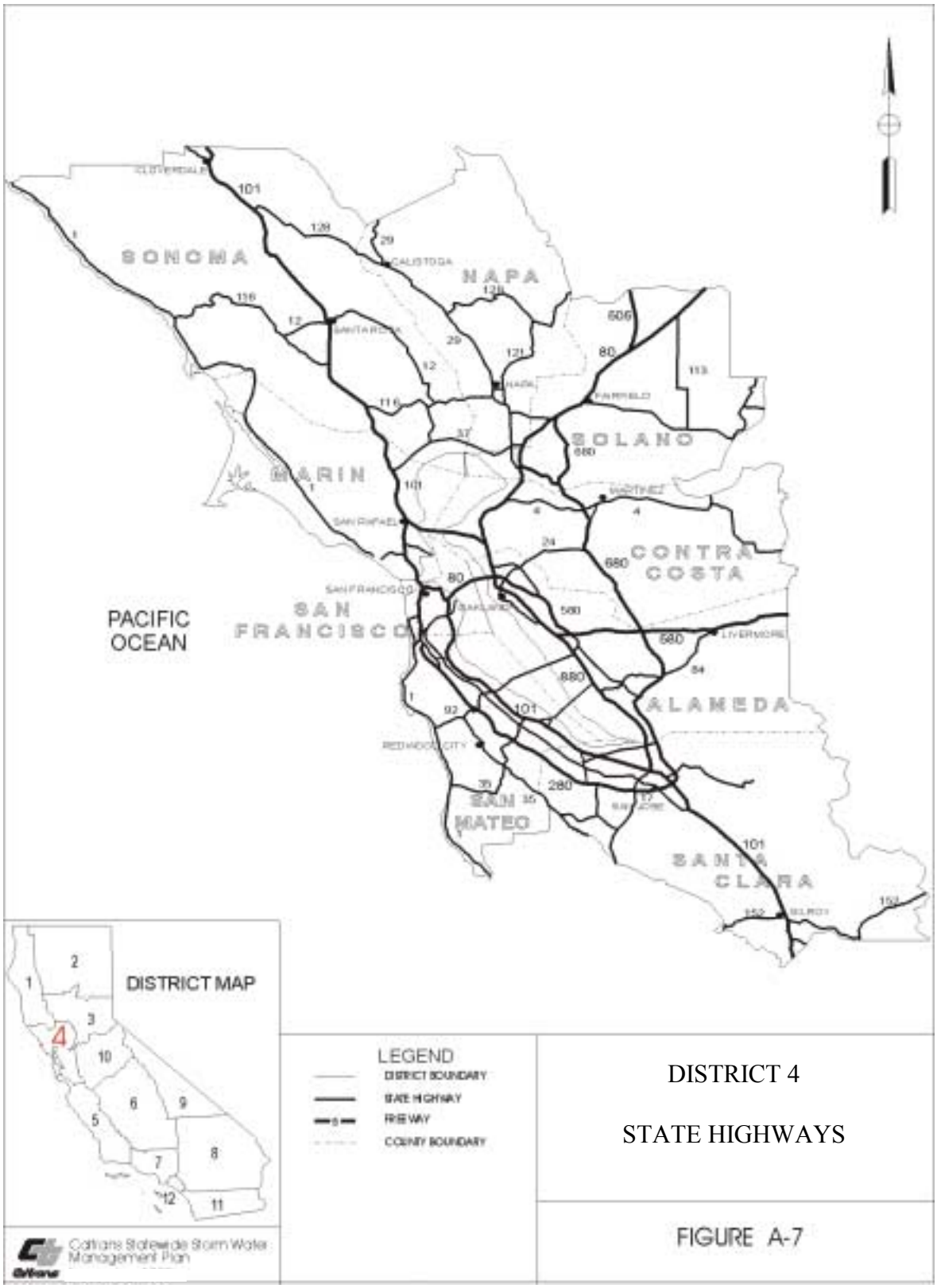

SONOMA
NAPA
MARIN
SOLANO
CONTRA COSTA
ALAMEDA
SAN MATEO
SANTA CLARA
SAN FRANCISCO
PACIFIC OCEAN
DISTRICT MAP
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
COUNTY BOUNDARY
DISTRICT 4
STATE HIGHWAYS
FIGURE A-7
Caltrans Statewide Storm Water Management Plan

TABLE A-7: DISTRICT 4 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS				
	ALA	0.0	Oakland	District 4 Office
280		3.6	Alemany/Specialty Region	Special Crews
17	MRN	0.2	San Rafael Paint	Special Crews
880	ALA	28.7	Oakland	Special Crews
680	CC	0.2	Alcosta	Landscape Maintenance
80	SOL	17.2	Fairfield	Landscape Maintenance
4	CC	1.0	Hercules	Landscape Maintenance
280	SM	17.9	Millbrae	Landscape Maintenance
680	SCL	7.5	Milpitas	Landscape Maintenance
101	SM	4.6	Redwood City	Landscape Maintenance
101	SON	20.6	Santa Rosa	Landscape Maintenance
580	ALA	38.9	Seminary	Landscape Maintenance
680	CC	6.7	Sycamore Valley Road	Landscape Maintenance
680	CC	15.6	Walnut Creek-West	Landscape Maintenance
4	CC	28.9	Antioch	Highway Maintenance
1	SON	12.1	Bodega Bay (closed)	Highway Maintenance
29	NAP	37.4	Calistoga	Highway Maintenance
80	SOL	0.70	Carquinez/Benicia/Antioch Bridge	Highway Maintenance
85	SCL	17.5	Cupertino	Highway Maintenance
80	SOL	39.8	Dixon	Highway Maintenance
880	ALA	20.0	East Bay Region	Highway Maintenance
1	SON	35.3	Fort Ross	Highway Maintenance
84	ALA	10.2	Fremont	Highway Maintenance
101	SON	43.0	Geyserville	Highway Maintenance
101	MON	10.3	Gilroy	Highway Maintenance
1	SM	26.9	Half Moon Bay	Highway Maintenance
580	ALA	28.9	Hayward	Highway Maintenance
580	ALA	13.1	Livermore	Highway Maintenance
1	MRN	0.1	Manzanita	Highway Maintenance
29	NAP	12.0	Napa	Highway Maintenance
101	MRN	3.0	North Bay Region	Highway Maintenance
1	MRN	28.2	Point Reyes	Highway Maintenance
12	SOL	26.0	Rio Vista	Highway Maintenance
101	SF	4.1	San Francisco	Highway Maintenance
880	SCL	4.3	San Jose	Highway Maintenance
12	SON	9.9	Sebastopol	Highway Maintenance
	SM	000.0	South San Francisco	Highway Maintenance
37	SOL	9.8	Vallejo	Highway Maintenance
680	CC	15.6	Walnut Creek-East	Highway Maintenance
920	SM	13.6	West Bay Region	Highway Maintenance
280	SM	4.6	Woodside	Highway Maintenance
80	ALA	2.0	Toll Bridge Region	Special Crews
29	NAP	43.6	Mount Saint Helena	Salt and Sand Storage

TABLE A-7: DISTRICT 4 FACILITIES

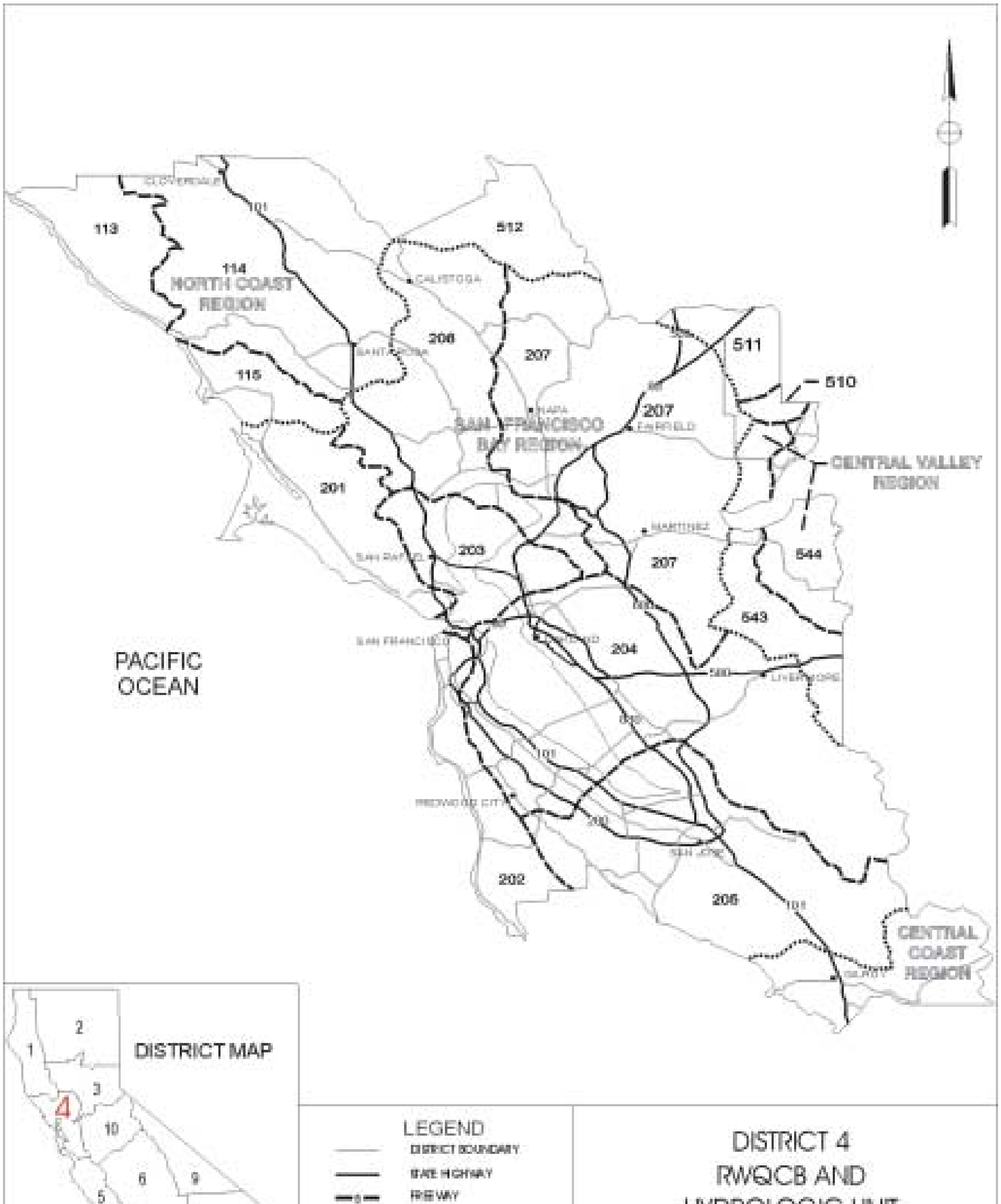
RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS (continued)				
24	ALA	5.7	Caldecott Tunnel	Special Crews
580	ALA	35.7	106th Street	Special Crews
580	ALA	41.6	14th Avenue (closed)	Special Crews
780	SOL	2.2	Benicia	Special Crews
80	ALA	2.0	East Bay Paint	Special Crews
580	ALA	44.5	Kempton (closed)	Special Crews
101	SCL	49.0	Middlefield Road	Special Crews
880	ALA	28.7	Oakland	Special Crews
0	SCL	0.0	Page Mill Road	Special Crews
260	ALA	2.0	Posey/Webster	Special Crews
580	MRN	6.1	Richmond & San Rafael Br.	Special Crews
92	SM	2.6	San Mateo/Hayward & Dumba	Special Crews
92	SM	14.5	San Mateo Paint	Special Crews
101	SON	3.0	South Petaluma	Special Crews
80	SF	5.4	West Bay Paint	Special Crews
280	SM	22.7	Westborough (closed)	Special Crews
17	SCL	7.1	Los Gatos	Satellite
680	CC	0.1	Scott Creek Road (closed)	Satellite
35	SM	10.0	Skylonda (closed)	Satellite
24	ALA	3.1	Telegraph	Landscape Maintenance
VISTA POINTS				
280	SM	7.6		Vista Point
280	SM	8.4	Edgewood & Route 92	Vista Point
280	SM	9.4	Edgewood & Route 92	Vista Point
35		4.5		Vista Point
35	SM	14.3	Skaggs Point	Vista Point
35	SM	23.0	Jct. 35/92	Vista Point
1	MRN	6.1		Vista Point
1	MRN	7.1	Muir Beach Overlook	Vista Point
101	MRN	0.1	Golden Gate Vista Point	Vista Point
35	SCL	14.1		Vista Point
29	NAP	6.6		Vista Point
COMMERCIAL VEHICLE ENFORCEMENT FACILITIES				
80	SOL	14.4	Cordelia	Westbound (WB)
80	SOL	14.2	Cordelia	Eastbound (EB)
101	MRN	15.2	St. Vincents	Southbound (SB)
101	MRN	14.1	Terra Linda	Northbound (NB)
101	SCL	8.8	Gilroy	SB
580	ALA	R8.9	Livermore	WB
580	ALA	R9.2	Livermore	EB
680	ALA	R8.7	Mission Grade	NB
680	CC	16.0	Walnut Creek	SB
680	CC	15.9	Walnut Creek	NB
880	ALA	3.7	Nimitz	SB
880	ALA	4.2	Nimitz	NB

TABLE A-7: DISTRICT 4 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
SAFETY ROADSIDE REST AREAS				
280	SM	R13.5	Crystal Springs	Near San Francisco Reservoir
80	SOL	6.7	Hunter Hill	7 mi. E of Vallejo
101	MRN	0.3	Dana Bowers	Northbound 101
PARK AND RIDE FACILITIES				
24	CC	1.2	Orinda	SW corner Gateway Blvd IC
580	ALA	41.4	Fruitvale	Fruitvale Avenue IC in Oakland
101	MAR	4.1	Manzanita	Route 1 IC in Marin City
1	SM	41.0	Pacifica	NE corner Linda Mar Blvd & Route 1
280	SCL	18.4	Page Mill	SE corner Page Mill Road IC near Los Altos Hills
116	SON	35.0	Petaluma	SW corner Route 101 Interchange
101	SON	12.7	Cotati	SE corner of Route 116 IC
101	MRN	22.0	Novato	E side Atherton Avenue Interchange
280	SM	3.3	Woodside	SW corner Woodside Road Interchange
101	MAR	14.7	Lucas Valley	SE corner of Lucas Valley IC
80	CC	10.7	Willow	Willow Ave IC NW & SE corners
4	CC	11.1	Pacheco	NE corner Pacheco Blvd & Blum Rd
121	SON	6.7	Schellville	SE corner IC @ Rte. 116
101	MAR	5.4	Seminary	NW & SE corners Seminary Dr in Mill Valley
101	MAR	1.5	Spencer	NW corner Spencer Ave near Sausalito
92	SM	7.9	Ralston	SE corner Ralston Ave IC in Belmont
80	SOL	2.2	Lemon St.	Lemon St. & Curtola Pkwy.
80	CC	13.5	Crockett	NW corner San Pablo Ave in Crockett
101	MAR	16.6	Alameda Del Prado	SW corner of Alameda Del Prado in Novato
37	MAR	13.8	Black Pt/Atherton	NW corner Atherton Ave IC near Black Point
12	SON	16.3	Maple Avenue	Maple Ave (Brookwood) S. Rosa
101	SM	13.5	3rd Ave-San Mateo	NE corner 3rd Ave in San Mateo
101	MAR	12.2	Lincoln Ave.	W side Lincoln Ave IC in San Rafael
84	ALA	R3.0	Dumbarton	Route 84 & Ardenwood
1	SM	41.2	Crespi Drive	SE corner Crespi Dr & Route 1
680	ALA	6.4	Mission Blvd.	IC of Route 238 near Mission Blvd. in Fremont
580	ALA	30.7	John Drive	John Drive in Castro Valley

TABLE A-7: DISTRICT 4 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
PARK AND RIDE FACILITIES (continued)				
80	CC	6.0	Hilltop	NE corner Hilltop Dr. IC in Richmond
280	SM	6.7	Edgewood	NE corner Edgewood Road N of Woodside
580	ALA	13.2	Livermore	1624 Portola Ave in Livermore
680	CC	12.6	Rudgear	SE corner Rudgear Road IC in Walnut Creek
29	NAPA	10.3	Imola	NW side Route 29-Imola Ave W/GG in Napa
101	SON	2.9	Petaluma	SE corner S Petaluma Blvd. in Petaluma
580	ALA	29.0	Castro Valley	SE corner @ Center St. in Castro Valley
242	CC	0.9	Willow Pass	NE corner Willow Pass Road I/C in Concord
101	MAR	10.8	Hetherton	4th & Hetherton in San Rafael
101	SM	11.9	San Mateo	Route 92 (under SE overcrossing) San Mateo
101	SON	13.9	Rohnert Park Expressway	SW corner Rohnert Park Expressway in Rohnert Park.
280	SM	14.2	Hayne Road	SW corner Hayne Road IC near Redwood City
101	MAR		Rowland Blvd	Rowland Blvd in Novato
80	SOL	12.8	Green Valley Rd.	Green Valley Rd. IC NW in Cordelia
80	SOL	17.7	Magellan Rd.	Magellan Rd. IC with I-80
80	SOL	25.3	Mason St.	Mason St. Peabody Rd in Vacaville
80	SOL	2.6	Benicia Rd.	NE corner Benicia Rd. IC in Vallejo
80	SOL	1.8	Magazine St.	IC NW corner in Vallejo
12	SOL		Suisun City	Main and Florida
780	SOL	2.0	E. 2nd St	NE corner, Benicia
101	SON	2.9	S. Petaluma Blvd.	SE corner IC
13	ALA	14.0	Folger St.	I-80 27th St.
TOLL ROAD AND TOLL BRIDGE PLAZAS				
80	ALA	1.99	SF-OAK Bay Bridge	San Francisco-Oakland Bay Bridge
80	SOL	0.46	Carquinez	Carquinez Bridge
84	ALA	3.18	Dumbarton	Dumbarton Bridge
92	ALA	2.57	San Mateo/Hayward	San Mateo - Hayward Bridge
160	CC	0.69	Antioch	Antioch Bridge
580	MAR	6.13	Richmond/San Rafael	Richmond - San Rafael Bridge
680	SOL	0.60	Benicia/Martinez	Benicia - Martinez Bridge



DISTRICT 4
RWQCB AND
HYDROLOGIC UNIT
BOUNDARIES

FIGURE A-8

TABLE A-8: DISTRICT 4 - HYDROLOGIC UNIT LIST

North Coast Region (1)	
113	Mendocino Coast HU
114	Russian River HU
115	Bodega HU
San Francisco Bay Region (2)	
201	Marin Coastal HU
202	San Mateo Coastal HU
203	Central Basin HU
204	South Bay Basin HU
205	Santa Clara Basin HU
206	San Pablo Basin HU
207	Suisun Basin HU
Central Coast Region (3)	
304	Big Basin HU
305	Pajaro River HU
Central Valley Region (5)	
510	Sacramento Delta HU
511	Valley Putah-Cache HU
512	Putah Creek HU
543	North Diablo Range HU
544	San Joaquin Delta HU

A.5 DISTRICT 5

A.5.1 General

District 5 covers the Central Coast of California between the San Francisco Bay Area and Ventura County. The District includes San Benito, Monterey, San Luis Obispo, Santa Cruz and Santa Barbara Counties.

A.5.2 District 5 Facilities

District 5 boundaries, freeways and state highways are shown in Figure A-9. There are 1,896 centerline kilometers (1,178 miles) of freeway and state highway in District 5. District 5 freeways and highways are subject to an average of 15.6 million vehicle miles of travel each day. Names and locations of other Caltrans facilities, including maintenance stations, park-and-ride lots, roadside rest areas, vista points, toll plazas and inspection stations are listed in Table A-9.

Portions of District 5 lie within areas that are the responsibility of three RWQCBs. District 5 lies primarily within the boundaries of the Central Coast RWQCB. The northeast portion (eastern San Benito County) of the District is located in the Central Valley RWQCB, and the northern tip is located in the San Francisco Bay RWQCB. The relationship between District 5 and RWQCB boundaries is shown in Figure A-10.

Most of District 5 facilities lie within a number of watersheds that drain directly to the Pacific Ocean (Central Coast Region). The largest of these watersheds are the Pajaro, Salinas, Santa Maria and Santa Ynez River drainages. A small portion of the District is in the San Joaquin River watershed that drains to the Pacific Ocean via San Francisco Bay (Central Valley Region). The RWQCBs are divided into HUs as part of the regional basin plans. The RWQCB HUs located in District 5 are shown in Figure A-10 and listed in Table A-10.

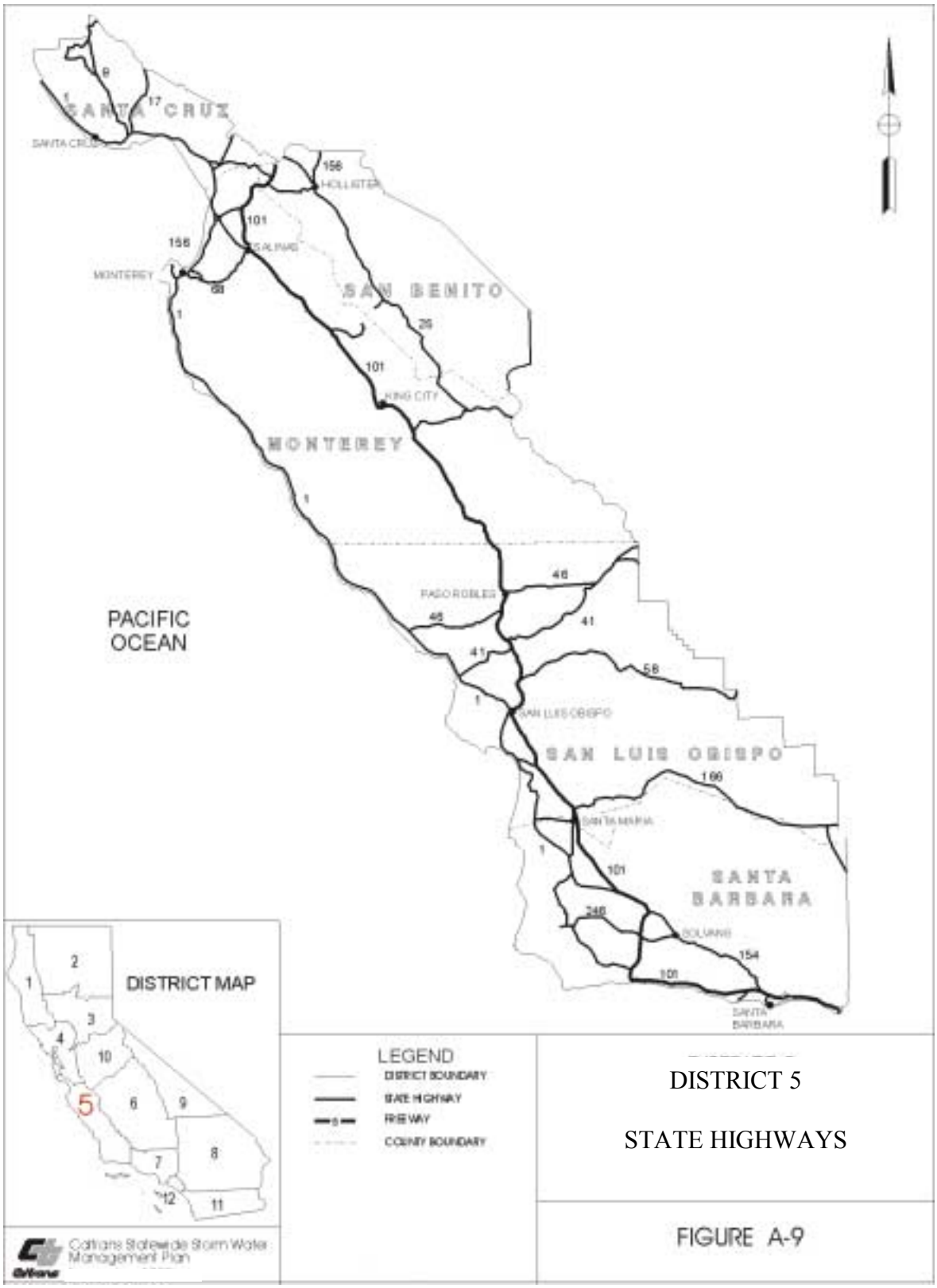

SANTA CRUZ
SANTA CRUZ
HOLLISTER
SALINAS
MONTEREY
SAN BENITO
KING CITY
MONTEREY
PACIFIC
OCEAN
PASO ROBLES
SAN LUIS OBISPO
SAN LUIS OBISPO
SANTA MARIA
SANTA
BARBARA
SOLVANG
SANTA
BARBARA
DISTRICT MAP
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
COUNTY BOUNDARY
DISTRICT 5
STATE HIGHWAYS
FIGURE A-9
Caltrans Statewide Storm Water Management Plan

TABLE A-9: DISTRICT 5 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS				
101		27.5	San Luis Obispo	Districts 5 Office
001		46.3	Big Sur	Highway Maintenance
101		57.7	Buellton	Highway Maintenance
001		46.0	Cambria	Highway Maintenance
166		60.1	Cuyama	Highway Maintenance
156		11.7	Hollister	Highway Maintenance
101		39.8	King City	Highway Maintenance
001		22.1	Lompoc	Highway Maintenance
068		5.2	Monterey	Highway Maintenance
101		86.3	Salinas	Highway Maintenance
101		27.5	San Luis Obispo	Highway Maintenance
101		18.1	Santa Barbara	Highway Maintenance
1		14.9	Santa Cruz	Highway Maintenance
135		13.5	Santa Maria	Highway Maintenance
041		42.3	Shandon-U.C.	Highway Maintenance
058		45.7	Simmler	Highway Maintenance
101		52.4	Templeton	Highway Maintenance
001		10.4	Willow Springs	Highway Maintenance
VISTA POINTS				
1		52.8	San Simeon Area	Vista Point
1		55.5	San Simeon Area	Vista Point
1		55.9	San Simeon Area	Vista Point
1		56.0	San Simeon Area	Vista Point
1		57.1	San Simeon Area	Vista Point
1		60.6	San Simeon Area	Vista Point
1		61.3	San Simeon Area	Vista Point
1		11.3	Willow Creek (USFS)	Vista Point
1		11.6	Willow Creek	Vista Point
1		27.0	Big Sur	Vista Point
1		37.0	Pfieffer Burns State Park	Vista Point
1		63.0	Garrapata Creek	Vista Point
101		41.1	Arroyo Hondo	Vista Point
154		13.56	Bradbury Dam Overlook	Vista Point
154		22.0	Cold Springs Rancho Cielo	Vista Point
COMMERCIAL VEHICLE ENFORCEMENT FACILITIES				
None.				
SAFETY ROADSIDE REST AREAS				
101	SB	46.9	Gaviota	At S end of Gaviota Tunnel; Northbound (NB) & Southbound (SB)
101	MON	R3.1	Camp Roberts	8.5 mi. N of San Miguel; NB & SB
46	SLO	49.6	Shandon	0.9 mi. E of Route 41 (W)

TABLE A-9: DISTRICT 5 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
PARK AND RIDE FACILITIES				
246	SB	34.4	Santa Ynez	N side Route 246 at Jct. Rtes 246 & 154
1	MON	101.1	Salinas Road	SE corner Route 1 & Salinas Road in Watsonville
1	MON	96.0	Moss Landing	NW corner N of Route 1 & Moss Landing
156	MON	4.7	Prunedale	NW corner Jct. Rtes 101 & 156
41	SLO	16.1	Mall-Atascadero	Mall extension near Santa Ysabel
101	SLO	42.3	Atascadero	SE corner Santa Barbara Road IC
135	SB	10.4	Orcutt	NW corner Clark Avenue IC
135	SB	10.4	Orcutt	NE corner Clark Avenue IC
135	SB	82.2	Orcutt	SE corner Clark Avenue IC
101	SLO	44.8	Cubaril Avenue	NE side Cubaril Avenue IC in Atascadero
TOLL ROAD AND TOLL BRIDGE PLAZAS				
None.				

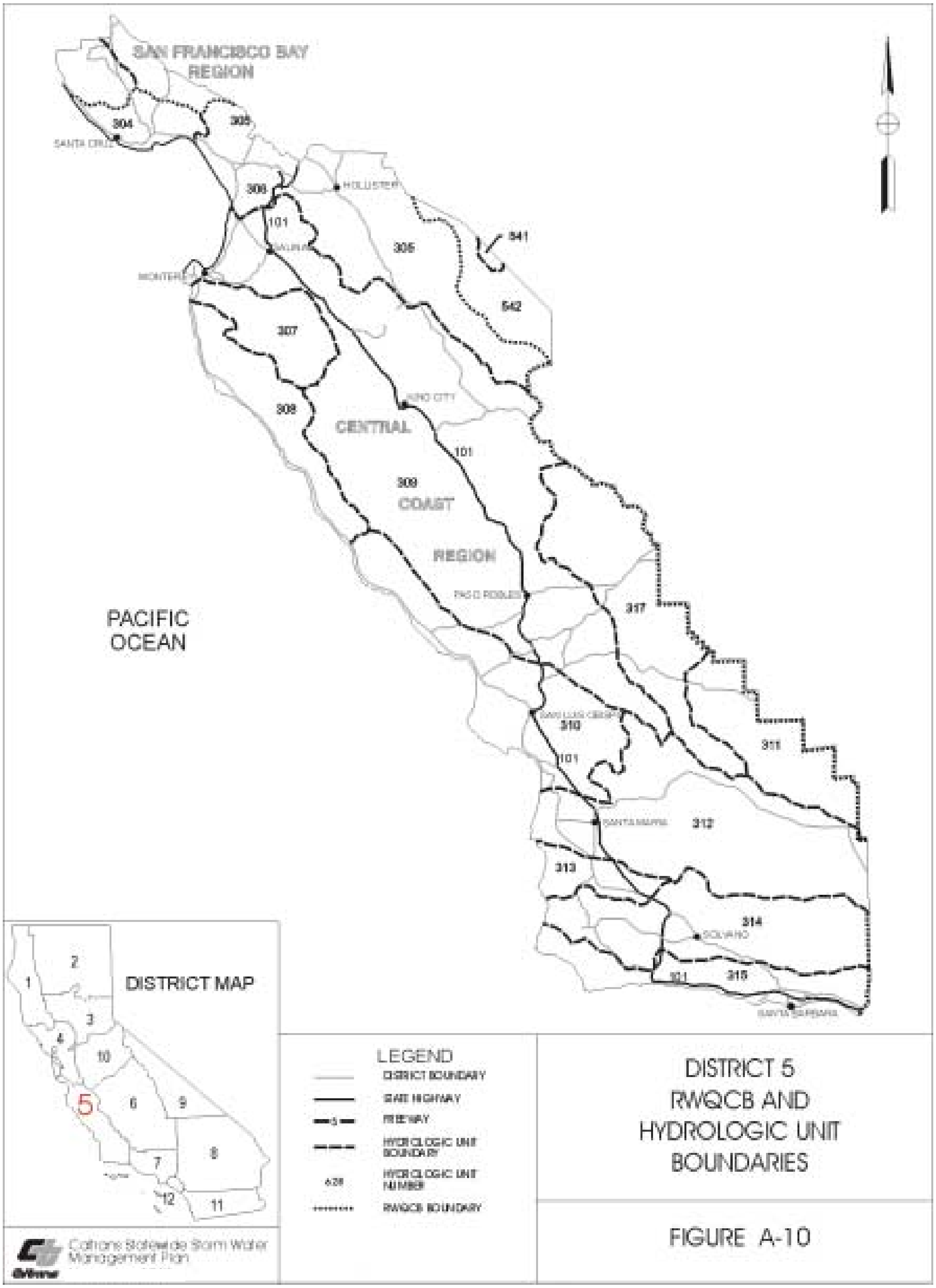

SAN FRANCISCO BAY REGION
PACIFIC OCEAN
CENTRAL
COAST
REGION
DISTRICT MAP
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
HYDROLOGIC UNIT BOUNDARY
HYDROLOGIC UNIT NUMBER
RWQCB BOUNDARY
DISTRICT 5
RWQCB AND
HYDROLOGIC UNIT
BOUNDARIES
Caltrans Statewide Storm Water Management Plan

FIGURE A-10

TABLE A-10: DISTRICT 5 - HYDROLOGIC UNIT LIST

San Francisco Bay Region (2)	
202	San Mateo Coastal HU
205	Santa Clara Basin HU
Central Coast Region (3)	
304	Big Basin HU
305	Pajaro River HU
306	Balsa Neuva HU
307	Carmel River HU
308	Santa Lucia HU
309	Salinas HU
310	Estero Bay HU
311	Carrizo Plain HU
312	Santa Maria HU
313	San Antonio HU
314	Santa Ynez HU
315	South Coast HU
317	Estrella River HU
Central Valley Region (5)	
541	Delta - Mendota Canal HU
542	Middle West Side HU

A.6 DISTRICT 6

A.6.1 General

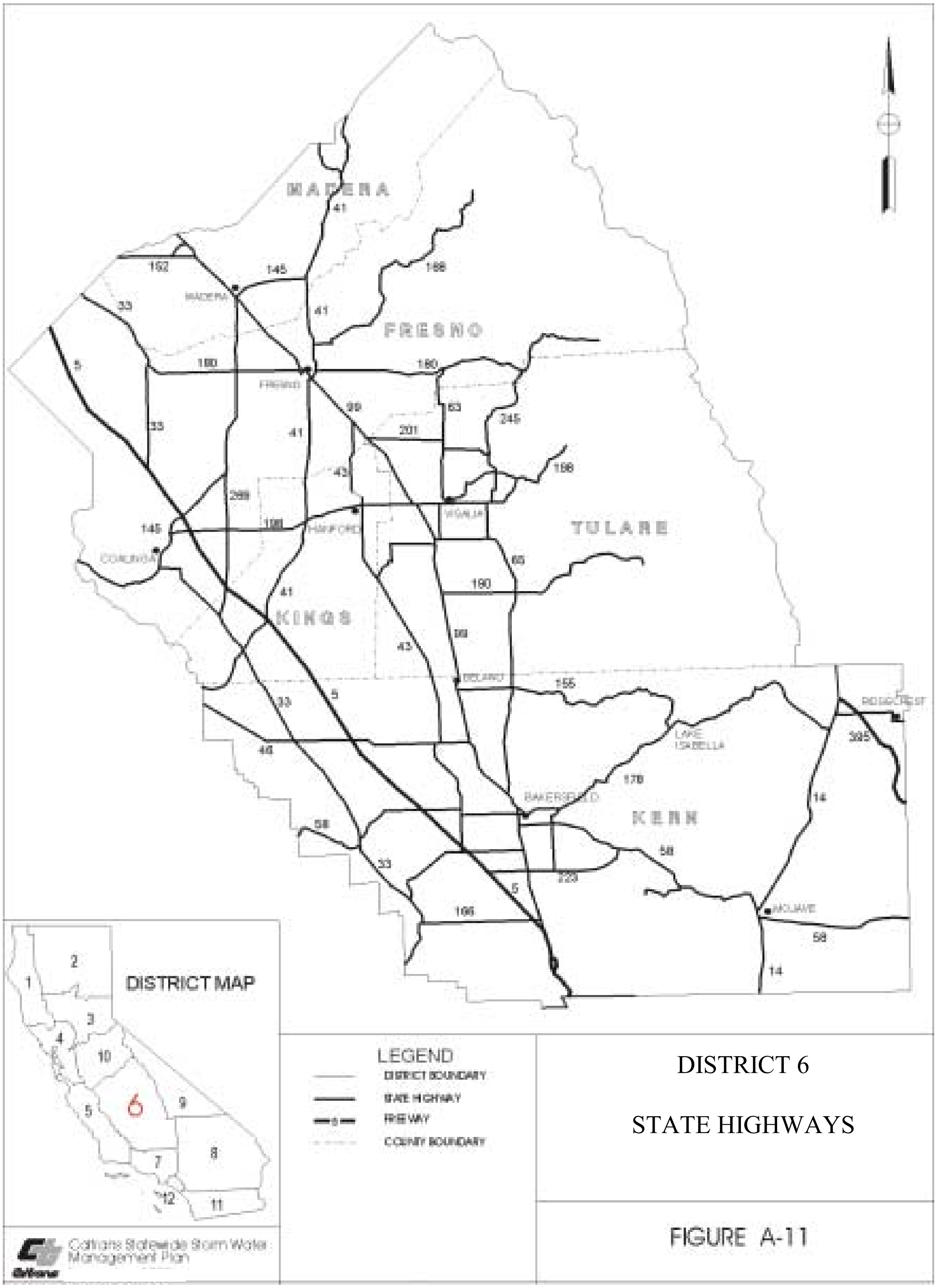
District 6 covers the southern San Joaquin Valley and the Sierra Nevada to the east. The District includes Madera, Fresno, Kings, Tulare and Kern Counties.

A.6.2 District 6 Facilities

District 6 boundaries, freeways and state highways are shown in Figure A-11. There are 3,293 centerline kilometers (2,046 miles) of freeway and state highway in District 6. District 6 freeways and highways are subject to an average of 22.0 million vehicle miles of travel each day. Names and locations of other Caltrans facilities, including maintenance stations, park-and-ride lots, roadside rest areas, vista points, toll plazas and inspection stations are listed in Table A-11.

Portions of District 6 lie within areas that are the responsibility of two RWQCBs. The majority of District 6 lies within the boundaries of the Central Valley RWQCB. A portion of District 6 in eastern Kern County lies within the Lahontan RWQCB area. The relationship between District 6 and RWQCB boundaries is shown in Figure A-12.

The northern end of District 6 lies within the San Joaquin River watershed, which drains to the Pacific Ocean via San Francisco Bay. Most of the District lies within the Tulare Basin, which is a closed basin draining to Buena Vista Lake via the Kern River and to Tulare Lake via the Tule, Kaweah and Kings Rivers. The RWQCBs are divided into HUs as part of the regional basin plans. The RWQCB HUs located in District 6 are shown in Figure A-12 and listed in Table A-12.



DISTRICT 6

STATE HIGHWAYS

FIGURE A-11

TABLE A-11: DISTRICT 6 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS				
99	FRE	23.3	Fresno	District 6 Office
99	KERN	27.9	South Region, Bakersfield	Regional Maintenance
99	KERN	27.9	Olive Drive LS	Landscape Maintenance
99	KERN	27.9	Bakersfield	Highway Maintenance
178	KERN	41.6	Bodfish	Highway Maintenance
41	MAD	28.7	Coarsegold	Highway Maintenance
33	FRE	19.9	Coalinga Yard	Highway Maintenance
99	KERN	54.5	Delano	Highway Maintenance
155	KERN	38.4	Glennville	Highway Maintenance
41	KIN	18.1	Kettleman City	Highway Maintenance
198	TUL	28.3	Lemon Cove	Highway Maintenance
198	KIN	10.6	Lemoore Yard	Highway Maintenance
145	MAD	8.6	Madera	Highway Maintenance
180	FRE	24.7	Mendota	Highway Maintenance
245	FRE	3.8	Pinehurst	Highway Maintenance
190	TUL	16.5	Porterville	Highway Maintenance
168	FRE	45.1	Shaver Lake	Highway Maintenance
33	KERN	20.5	Taft	Highway Maintenance
198	TUL	10.7	Visalia	Highway Maintenance
46	KERN	51.2	Wasco	Highway Maintenance
99	FRE	23.3	North Region and Pine Ave.	Highway Maintenance
180		108.8	Happy Gap	Sand and Salt Storage
99	TUL	29.7	Tulare	Special Crews
99	FRE	23.3	West Avenue	Special Crews
41	MAD	40.7	Big Cedar Springs	Satellite
43	KIN	1.5	Corcoran	Satellite
168	FRE	60.0	Huntington Lake	Satellite
46	KERN	30.4	Lost Hill	Satellite
33	KERN	34.3	McKittrick	Satellite
190	TUL	46.9	Pierpoint Springs	Satellite
178	KERN	68.8	South Fork	Satellite
VISTA POINTS				
168	FRE	36.0	Munger	Vista Point
180	FRE	123	Ten Mile Creek	Vista Point
COMMERCIAL VEHICLE ENFORCEMENT FACILITIES				
5	KERN	11.9	Grapevine	Southbound (SB)
58	KERN	81.0	Keene	Eastbound (EB)
58	KERN	105.5	Cache Creek	Westbound (WB)

TABLE A-11: DISTRICT 6 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
SAFETY ROADSIDE REST AREAS				
5	KERN	54.1	Buttonwillow	2 mi. N of Route 58 IC ; Northbound (NB) & SB
5	FRE	1.1/1.6	Coalinga-Avenal	1.2 mi. N of Lassen Avenue; NB & SB
99	TUL	22.3	Philip S. Raine	2.5 mi. N of Tipton; NB & SB
99	TUL	51.8	C. H. Warlow	At Dodge Ave near Kings River
58	KERN	R139	Boron	3.9 mi. W of Boron; EB & WB
5	KERN	1.0	Tejon Pass	3.5 mi. N of Gorman; NB & SB
PARK AND RIDE FACILITIES				
168	FRE	T32.9	Lodge Road	S side Intersection of Lodge Road & Route 168
168	FRE	T32.9	Lodge Road	Lodge Road & Route 168, TDD phone
58	KERN	59.4	Weedpatch NW	NW corner Weedpatch Hwy in Bakersfield
58	KERN	59.4	Weedpatch SE	SE corner Weedpatch Hwy in Bakersfield
99	KERN	23.9	Stockdale	Route 58 (Stockdale & Oakdale) in Bakersfield
119	KERN	2.2	Ford City	1.4 m N of Taft in Ford City
41	MAD	9.3	Madera County	N of intersection of Routes 145 & 41, E of Madera
41	MAD	17.9	O'Neals	SE corner Road 200/Rt 41
41	MAD	1.5	Old 41	N or Ave 10 on old Route 41 (N of Fresno)
43	KIN	22.1	Hanford	S of 10th Ave Y
155	KERN	70.8	Lake Isabella	NW corner Rtes 178 & 155
198	TUL	18.8	Mineral King	SW corner Rtes 65 & 198, E of Visailia
168	FRE	T31.2	Aubery Road	NE corner Aubery Road & Route 168
TOLL ROAD AND TOLL BRIDGE PLAZAS				
None.				


537
540
539
545
552
541
542
551
553
559
554
CENTRAL VALLEY REGION
558
556
554
395
625
556
557
LAHONTAN REGION
626
556
DISTRICT MAP
1
2
3
4
10
5
6
9
7
8
12
11
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
5
FREEWAY
HYDROLOGIC UNIT BOUNDARY
628
HYDROLOGIC UNIT NUMBER
RWQCB BOUNDARY
DISTRICT 6
RWQCB AND
HYDROLOGIC UNIT
BOUNDARIES
FIGURE A-12
California Statewide Storm Water Management Plan

TABLE A-12: DISTRICT 6 - HYDROLOGIC UNIT LIST

Central Valley Region (5)	
537	Merced River HU
539	Ahwahnee HU
540	San Joaquin River HU
541	Delta - Mendota Canal HU
542	Middle West Side HU
545	San Joaquin Valley Floor
551	South Valley Floor
552	Kings River HU
553	Kaweah River HU
554	Kern River HU
555	Southern Sierra HU
556	Grapevine HU
557	South Valley Floor HU
558	South Valley Floor HU
559	Coast Range HU
Lahontan Region (6)	
624	Indian Wells HU
625	Fremont HU
626	Antelope HU

A.7 DISTRICT 7

A.7.1 General

District 7 includes Los Angeles and Ventura Counties. It is the most populous of all Caltrans districts.

A.7.2 District 7 Facilities

District 7 boundaries, freeways and state highways are shown in Figure A-13. There are 1,944 centerline kilometers (1,208 miles) of freeway and state highway in District 7. District 7 freeways and highways are subject to an average of 103.2 million vehicle miles of travel each day. Names and locations of other Caltrans facilities, including maintenance stations, park-and-ride lots, roadside rest areas, vista points, toll plazas and inspection stations are listed in Table A-13.

Portions of District 7 lie within the areas that are the responsibility of four RWQCBs: the Los Angeles RWQCB, the Central Coast RWQCB, the Central Valley RWQCB and the Lahontan RWQCB. The relationship between District 7 and RWQCB boundaries is shown in Figure A-14.

Most of District 7 facilities lie within a number of watersheds that drain directly to the Pacific Ocean. The largest of these watersheds are the Santa Clara, Los Angeles and San Gabriel River drainages. The RWQCBs are divided into HUs as part of the regional basin plans. The RWQCB HUs located in District 7 are shown in Figure A-14 and listed in Table A-14.

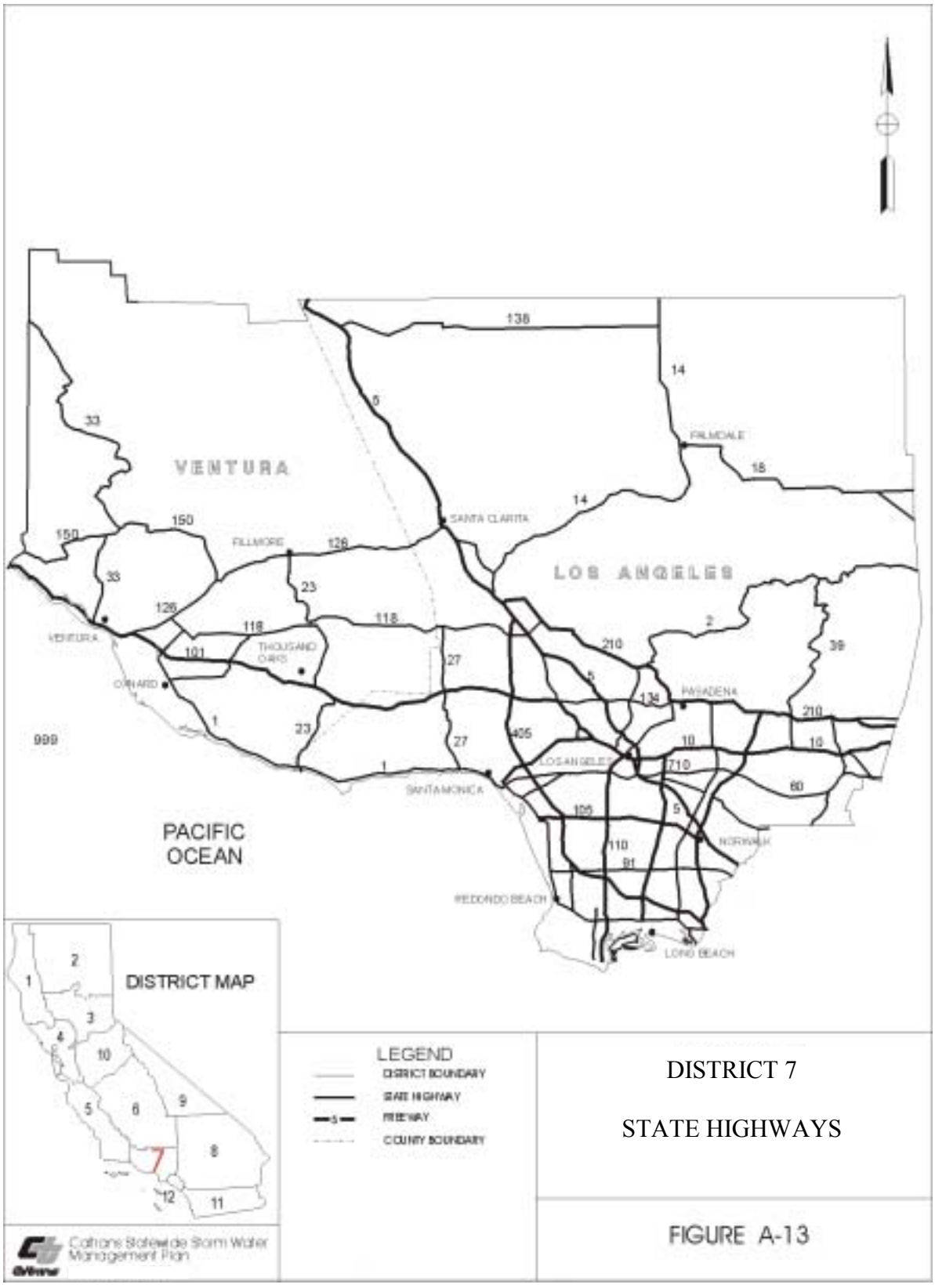

VENTURA
LOS ANGELES
PACIFIC OCEAN
SANTA CLARITA
FILLMORE
PALMDALE
VENTURA
OXNARD
THOUSAND OAKS
PASADENA
LOS ANGELES
SANTA MONICA
NORWALK
REDONDO BEACH
LONG BEACH
DISTRICT MAP
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
COUNTY BOUNDARY
DISTRICT 7
STATE HIGHWAYS
FIGURE A-13
Caltrans Statewide Storm Water Management Plan

TABLE A-13: DISTRICT 7 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS				
5	LA	19.2	120 Spring Street, LA	District 7 Office
405	LA	13.3	Artesia	Landscape Maintenance
10	LA	14.3	Middleburry	Landscape Maintenance
10	LA	8.8	Apple St	Landscape Maintenance
11	LA	29.3	Arroyo Seco	Landscape Maintenance
5	LA	31.2	Buena Vista	Landscape Maintenance
91	LA	17.0	Cerritos	Landscape Maintenance
90	VEN	2.5	Aviation	Highway Maintenance
101		30.8	Garden St	Landscape Maintenance
126	VEN	12.1	Harvard St	Landscape Maintenance
405	LA	7.2	Pacific Place	Landscape Maintenance
10	LA	45.8	Pomona	Landscape Maintenance
47	LA	1.9	San Pedro	Landscape Maintenance
405	LA	29.5	Sawtelle	Highway Maintenance
5	LA	35.9	Sheldon Street	Landscape Maintenance
5	LA	10.3	Central/Bandini	Highway Maintenance
10	LA	17.0	Alameda	Highway Maintenance Special Crews
2	LA	1.8	Altadena	Highway Maintenance
91	LA	15.7	Bellflower	Highway Maintenance
1	VEN	3.8	Big Sycamore	Highway Maintenance
101	VEN	12.3	Camarillo	Highway Maintenance
	LA	0.0	Century MS	Highway Maintenance
2	LA	48.5	Chilao	Highway Maintenance
57	LA	4.5	Diamond Bar	Highway Maintenance
60	LA	11.9	Eastern Region	Highway Maintenance
126	VEN	20.4	Fillmore	Highway Maintenance
605	LA	9.5	Florence	Highway Maintenance
210	LA	34.9	Foothill	Highway Maintenance
7	LA	24.6	Humphrey Street/East LA	Highway Maintenance
14	LA	67.4	Lancaster	Highway Maintenance
1	VEN	43.7	Las Flores	Highway Maintenance
5	LA	1.5	Lebec	Highway Maintenance
405	LA	8.1	Long Beach	Highway Maintenance
118	VEN	17.2	Moorpark	Highway Maintenance
126	LA	11.4	Newhall & North Region	Highway Maintenance
101	LA	11.2	North Hollywood	Highway Maintenance
33	VEN	11.2	Ojai Yard	Highway Maintenance
164	LA	6.7	Rosemead	Highway Maintenance
405	LA	48.6	San Fernando	Highway Maintenance
5	LA	22.5	Silver Lake	Highway Maintenance
101	VEN	21.2	Tarzana	Highway Maintenance
107	VEN	4.3	Torrance Yard	Highway Maintenance
101	VEN	30.9	Ventura	Highway Maintenance
405	LA	29.5	Westdale	Highway Maintenance

TABLE A-13: DISTRICT 7 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS (continued)				
2		61.8	Cedar Springs	Sand and Salt Storage
5		88.3	Frasier Park	Sand and Salt Storage
5		75.6	Liebre	Sand and Salt Storage
5		81.9	Quail Lake	Sand and Salt Storage
33		30.12	Sespe Gorge	Sand and Salt Storage
14		54.6	Vincent	Sand and Salt Storage
14		46.8	Ward Road	Sand and Salt Storage
5		68.0	Whittier	Sand and Salt Storage
47	LA	1.9	Bridge Crew	Special Crews
5	LA	28.8	Burbank Electrical	Special Crews
5	LA	22.5	Highland Park	Special Crews
10	LA	14.8	Metro Electrical	Special Crews
210	LA	34.9	Pump Repair Crew	Special Crews
5	LA	5.0	Tejon Mtn. Safety	Special Crews
47	LA	1.9	Vincent Thomas Paint	Special Crews
405	LA	30.7	Westwood Electrical Crew	Special Crews
405	LA	2.2	Willow Street Electrical Crew	Special Crews
VISTA POINTS				
14	KERN	57.8	Lamont-Odet	Vista Point
COMMERCIAL VEHICLE ENFORCEMENT FACILITIES				
5	LA	R54.4	Castaic	Northbound (NB)
101	VEN	9.2	Conejo	Southbound (SB)
101	VEN	9.0	Conejo	NB
405	LA	12.2	Carson	SB
405	LA	11.7	Carson	NB
SAFETY ROADSIDE REST AREAS				
None.				
PARK AND RIDE FACILITIES				
2	LA	17.0	Verdugo	Verdugo Blvd at Hilldale Dr, La Canada
2	LA	23.1	La Canada	SW corner Foothill Blvd in La Canada
5	LA	8.3	Lakewood East	Route 5 at Lakewood Blvd in Downey
5	LA	8.3	Lakewood West	SE corner Lakewood & Vista Del Rosa
10	LA	45.7	Garey/Route 10	SE corner Garey & McKinley Avenues in Pomona
10	LA	40.5	Via Verde	NW corner Via Verde in San Dimas
14	LA	27.1	Newhall East Lot	E side Route 126 in Newhall
14	LA	27.1	Newhall West Lot	SW corner Route 126 & Sierra Hwy in Newhall
126	LA	T12.2	Oak Creek	0.5 miles W Rte. 14
14	LA	27.1	Golden Valley	Golden Valley
138	LA	25.1	Pearblossom	Route 138 at Sierra Highway in Pearblossom

TABLE A-13: DISTRICT 7 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
PARK AND RIDE FACILITIES (continued)				
14	LA	66.7	Ave K at Route 14	NW corner Ave K & Route 14 in Lancaster
57	LA	3.4	Pathfinder Road	Pathfinder Road at Route 57 in Diamond Bar
60	LA	25.6	Diamond Bar East	NE corner Diamond Bar Blvd
60	LA	25.6	Diamond Bar West	NW corner Diamond Bar Blvd.
91	LA	R11.4	Butler-Long Beach	SE corner Butler Ave & Artesia Blvd
101	VEN	7.0	Borchard	NE corner Borchard Rd in Thousand Oaks
101	VEN	12.3	Pleasant Valley	Pleasant Valley Rd. in Camarillo
101	VEN	15.7	Los Posas	SE corner Los Posas Road IC in Camarillo
101	LA	35.1	Kanan (N)	SE corner Kanan & Roadside in Agoura Hills
101	LA	35.1	Kanan (S)	NW corner Kanan Rd. intersection with Canwood
105	LA	2.2	Aviation	Route 105 at Aviation, El Segundo
105	LA	3.7	Hawthorne Blvd.	Route 105 at Hawthorne Blvd in Hawthorne
105	LA	5	Crenshaw	Route 105 on 120th St, Ingelwood
105	LA	7.4	Vermont Avenue	Route 105 at Vermont Avenue, Athens
105	LA	7.7	Century/Harbor Jct.	Route 105 & Route 110 near Hoover St, in Los Angeles
105	LA	8.9	Avalon	Route 105 at Avalon in L.A.
105	LA	10.4	Willowbrook	Wilmington (Blue Line), Willowbrook
105	LA	11.6	Long Beach Blvd.	Route 105 at Long Beach Blvd, Lynwood
105	LA	17.4	Lakewood Blvd.	Route 105 at Lakewood Blvd, Downey
105	LA	18.8	I-105 Termination	Route 105 at Studebaker, Norwalk
110	LA	1.2	San Pedro II	515 N. Beacon at Harbor in San Pedro
110	LA	1.3	San Pedro	Battery and Gaffey Streets
110	LA	6.8	Carson	Route 110 at Carson St in Los Angeles County
110	LA	15.8	Manchester	Route 110 at Manchester in Los Angeles
118	VEN	17.5	Moorpark College	Route 118 at Collins Ave in Moorpark
118	VEN	25.7	Sycamore Dr.	Sycamore Dr. IC SW corner in Simi Valley
118	VEN	28.8	Stearns-Simi	SE corner Stearns St in Simi Valley
126	LA	12.2	Oak Creek Ave.	0.5 miles W Rte. 14
170	LA	16.6	Oxnard Street	SE corner Oxnard St IC in N Hollywood
210	LA	6.0	Paxton	SE corner Paxton St in Pacoima
210	LA	R16.1	Lowell	SE corner Lowell Ave in Glendale
210	LA	29.4	Sierra Madre Blvd.	Sierra Madre Blvd. at Route 210

TABLE A-13: DISTRICT 7 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
PARK AND RIDE FACILITIES (continued)				
210	LA	R41.5	Grand Ave	SE corner Grand & Baseline in Glendora
210	LA	44.2	Lone Hill	Route 210 at SE corner Lone Hill in Glendora
210	LA	47.2	Via Verde	Via Verde IC NW corner in San Dimas
405	LA	43.0	Van Nuys Blvd.	NE corner Van Nuys Blvd/Keswick
TOLL ROAD AND TOLL BRIDGE PLAZAS				
47	SANP	2.2	Vincent Thomas	Vincent Thomas Bridge

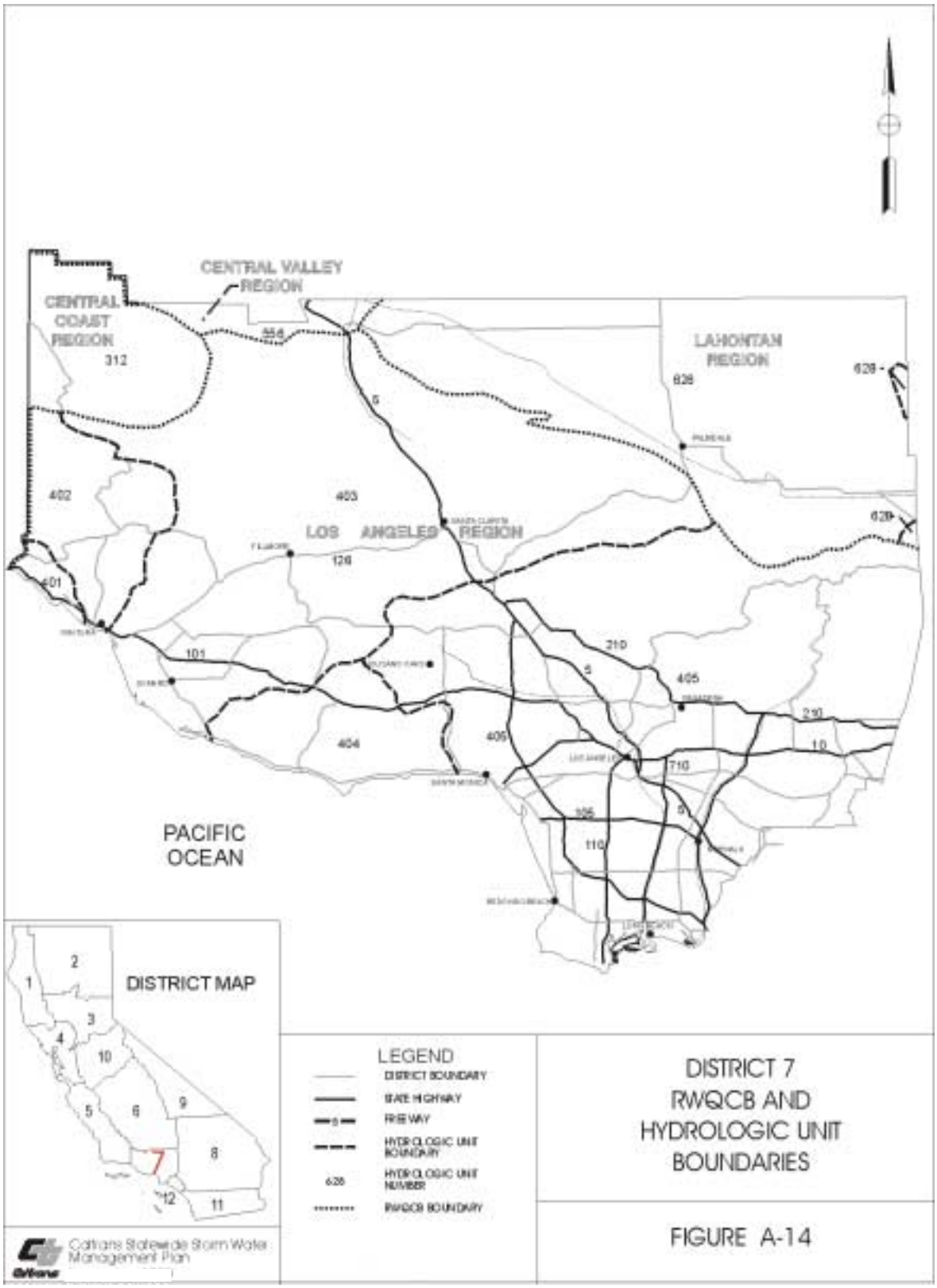

CENTRAL VALLEY REGION
CENTRAL COAST REGION
LAHONTAN REGION
LOS ANGELES REGION
PACIFIC OCEAN
DISTRICT MAP
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
HYDROLOGIC UNIT BOUNDARY
HYDROLOGIC UNIT NUMBER
RWQCB BOUNDARY
DISTRICT 7
RWQCB AND
HYDROLOGIC UNIT
BOUNDARIES
FIGURE A-14
Caltrans Statewide Storm Water Management Plan

TABLE A-14: DISTRICT 7 - HYDROLOGIC UNIT LIST

Central Coast Region (3)	
312	Santa Maria HU
Los Angeles Region (4)	
401	Pitas Point HU
402	Ventura River HU
403	Santa Clara - Calleguas HU
404	Malibu HU
405	Los Angeles - San Gabriel River HU
Central Valley Region (5)	
556	Grapevine HU
Lahontan Region (6)	
626	Antelope HU
628	Mojave HU

A.8 DISTRICT 8

A.8.1 General

District 8 includes San Bernardino County and Riverside County.

A.8.2 District 8 Facilities

District 8 boundaries, freeways and state highways are shown in Figure A-15. There are 3,108 centerline kilometers (1,931 miles) of freeway and state highway in District 8. District 8 freeways and highways are subject to an average of 43.7 million vehicle miles of travel each day. Names and locations of other Caltrans facilities, including maintenance stations, park-and-ride lots, roadside rest areas, vista points, toll plazas and inspection stations are listed in Table A-15.

Portions of District 8 lie within the areas that are the responsibility of four RWQCBs: the Santa Ana RWQCB, the San Diego RWQCB, the Colorado River Basin RWQCB and the Lahontan RWQCB. The relationship between District 8 and RWQCB boundaries is shown in Figure A-16.

The southern portion of the District lies within the watershed of the Salton Sea (Colorado River Basin Region). The northern portion of the District lies in the Great Basin Physiographic Province and is internally drained (Lahontan Region). The RWQCBs are divided into HUs as part of the regional basin plans. The RWQCB HUs located in District 8 are shown in Figure A-16 and listed in Table A-16.

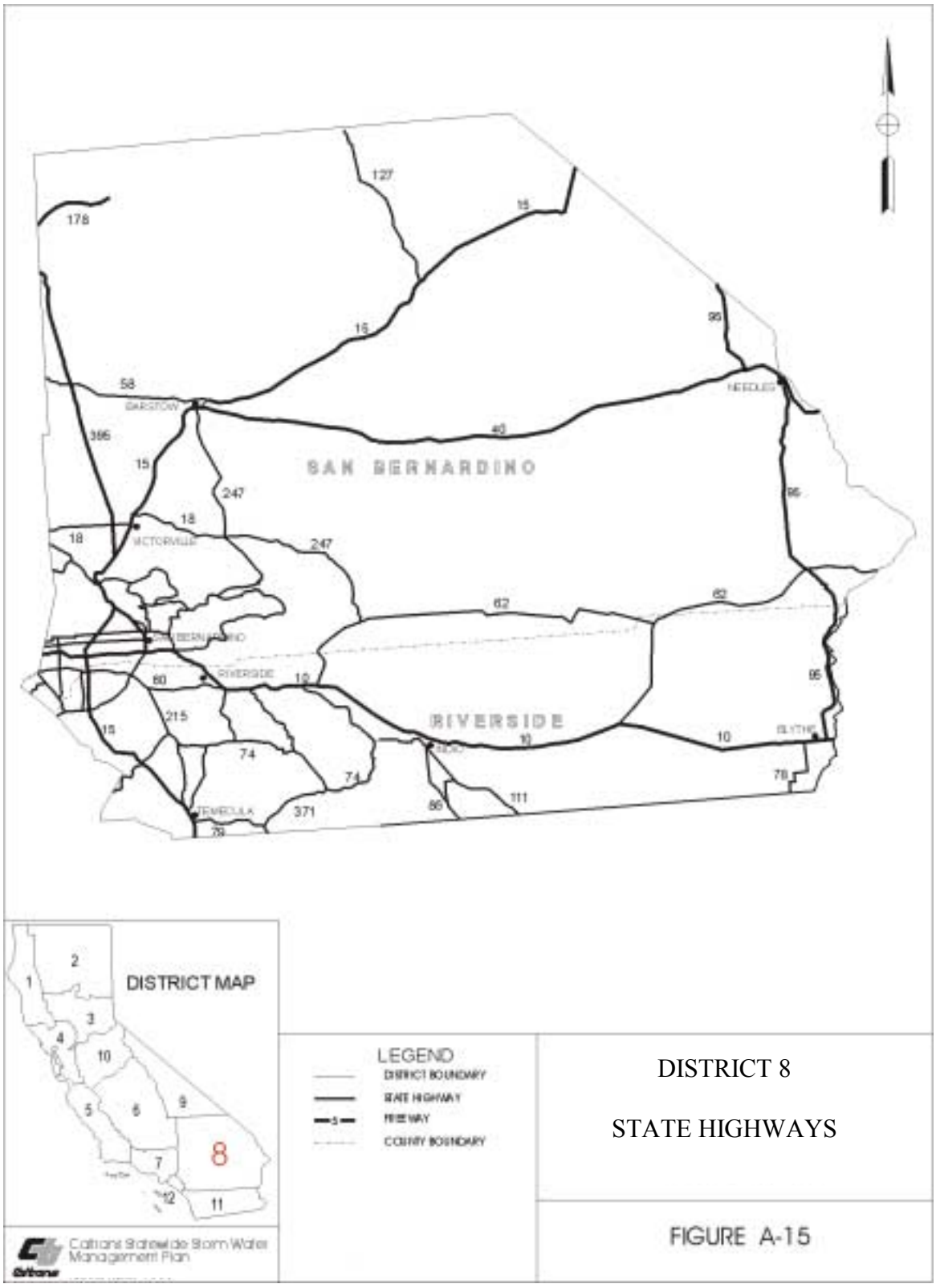

SAN BERNARDINO
RIVERSIDE
DISTRICT MAP
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
COUNTY BOUNDARY
DISTRICT 8
STATE HIGHWAYS
FIGURE A-15
Caltrans Statewide Storm Water Management Plan

TABLE A-15: DISTRICT 8 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS				
215	SBD	6.9	San Bernardino	District 8 Office
10		20.0	Fontana	Highway Maintenance
15	RIV	40.9	Corona	Highway Maintenance
10		104.5	Desert Center	Highway Maintenance
10		20.0	Colton	Other Maintenance
215		6.1	San Bernardino	N. Regional Office/Electrical
10		14.6	Banning	Highway Maintenance
40		0.8	Barstow	Highway Maintenance
395		45.9	Beechers Corner	Highway Maintenance
10		152.6	Blythe	Highway Maintenance
18		25.2	Burnt Mill	Highway Maintenance
138	SBD	15.3	Cajon	Highway Maintenance
38	SBD	20.2	Camp Angelus	Highway Maintenance
10		20.0	Colton	Highway Maintenance
91	RIV	6.1	Corona	Highway Maintenance
18		32.9	Dry Creek	Highway Maintenance
74	RIV	17.8	Elsinore	Highway Maintenance
40		99.7	Essex	Highway Maintenance
38	SBD	51.9	Fawnskin	Highway Maintenance
79	RIV	27.4	Hemet	Highway Maintenance
86		2.8	Indio	Highway Maintenance
74	RIV	65.7	Keen Camp	Highway Maintenance
10	SBD	20.0	Slover Mt	Highway Maintenance
15		170.6	Mountain Pass	Highway Maintenance
40		143.7	Needles	Highway Maintenance
60	SBD	5.8	Ontario	Highway Maintenance
18	SBD	15.8	Panorama	Highway Maintenance
62		15.1	Paradise Valley	Highway Maintenance
91	RIV	21.3	Riverside	Highway Maintenance
215	RIV	41.4	Riverside	S. Regional Office /Highway Maintenance
10	SBD	6.4	San Bernadino	Highway Maintenance
15		40.2	Victorville	Highway Maintenance
62		125.8	Vidal Junction	Highway Maintenance
10	RIV	6.9	Beaumont	Satellite
18	SBD	39.0	Lakeview	Satellite
VISTA POINTS				
243	RIV	13.8	Indian Hill Road Vista Point	Vista Point
COMMERCIAL VEHICLE ENFORCEMENT FACILITIES				
10		R15.8	Desert Hills	Westbound (WB)
10		R15.5	Desert Hills	Eastbound (EB)
10		R144.5	Blythe	WB
15	SBD	R20.9	Cajon	Southbound (SB)
15	SBD	R20.6	Cajon	Northbound (NB)
15		1.0	Rainbow	NB

TABLE A-15: DISTRICT 8 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
SAFETY ROADSIDE REST AREAS				
10	SBD	R38.2	Wildwood	1 mi. W of Calimesa
10	RIV	R4.2	Brookside	3 mi. W of Beaumont
10	RIV	26.2	Whitewater	1 mi. W of Whitewater OC; EB & WB
10	RIV	R72	Cactus City	15 mi. E of Indio; EB & WB
10	RIV	R135	Wiley's Well	15 mi. W of Blythe
40	SBD	R28.4	Desert Oasis	9 mi. E of Newberry; EB & WB
40	SBD	R106	Wilkie at Fenner	45 mi. W of Needles; EB & WB
10	SBD	14.3	Fontana	Closed – Storage site
15	SBD	R107.4	Clyde V. Kane	30 mi. E of Barstow; NB & SB
15	SBD	161.2	Valley Wells	26 mi. W of Nevada State Line; NB & SB
PARK AND RIDE FACILITIES				
405	LA	36.7	Mulholland/Skirball	Mulholland/Skirball Center Drive SE
10	SBD	18.5	Cedar	NW corner Cedar Ave in Bloomington
10	SBD	35.4	Yucaipa	Yucaipa Blvd & I-10 in Yucaipa
15	RIV	6.6	Rancho California	NE corner Route 79 (Winchester Rd)
15	SBD	6.8	Baseline	SW corner Baseline Ave in Rancho Cucamonga
15	RIV	22.2	Lake Elsinore	SE corner Route 74 in Lake Elsinore
15	SBD	37.6	Bear Valley	SW corner Bear Valley Rd in Victorville
10	SBD	15.1	Fontana-Slover	
15	RIV	43.6	Four Wheel Drive	FWD off Hammer Ave & 2nd St in Norco
15	RIV	48.1	Limonite	NE corner Limonite Ave near Mira Loma
15	SBD	79.6	Meridian	NE corner Meridian Rd in Barstow
18	SBD	24.7	Lake Arrowhead	S side Rtes 173 & 18 in Lake Arrowhead
18	SBD	31.8	Running Springs	SE corner Palo Alto Way & Route 330
60	RIV	1.8	Van Buren	NW corner Van Buren Blvd in Mira Loma
60	RIV	3.0	Country Village	NE corner Country Village in Glen Avon
60	RIV	11.8	Orange Street	2212 Orange Street in Riverside
91	RIV	6.3	Corona	SE corner E Grand Ave (Main St) in Corona
15	RIV	45.6	Norco	Route 15 at 6th St
60	RIV	14.3	Moreno Valley	Route 60 at Pigeon Pass Rd
10	SBD	0.7	Montclair	Route 10 at Central
15	SBD	71.68	Barstow	Route 15 at "L" St
71	SBD	0.854	Chino	Route at Chino Ave
TOLL ROAD AND TOLL BRIDGE PLAZAS				
None.				

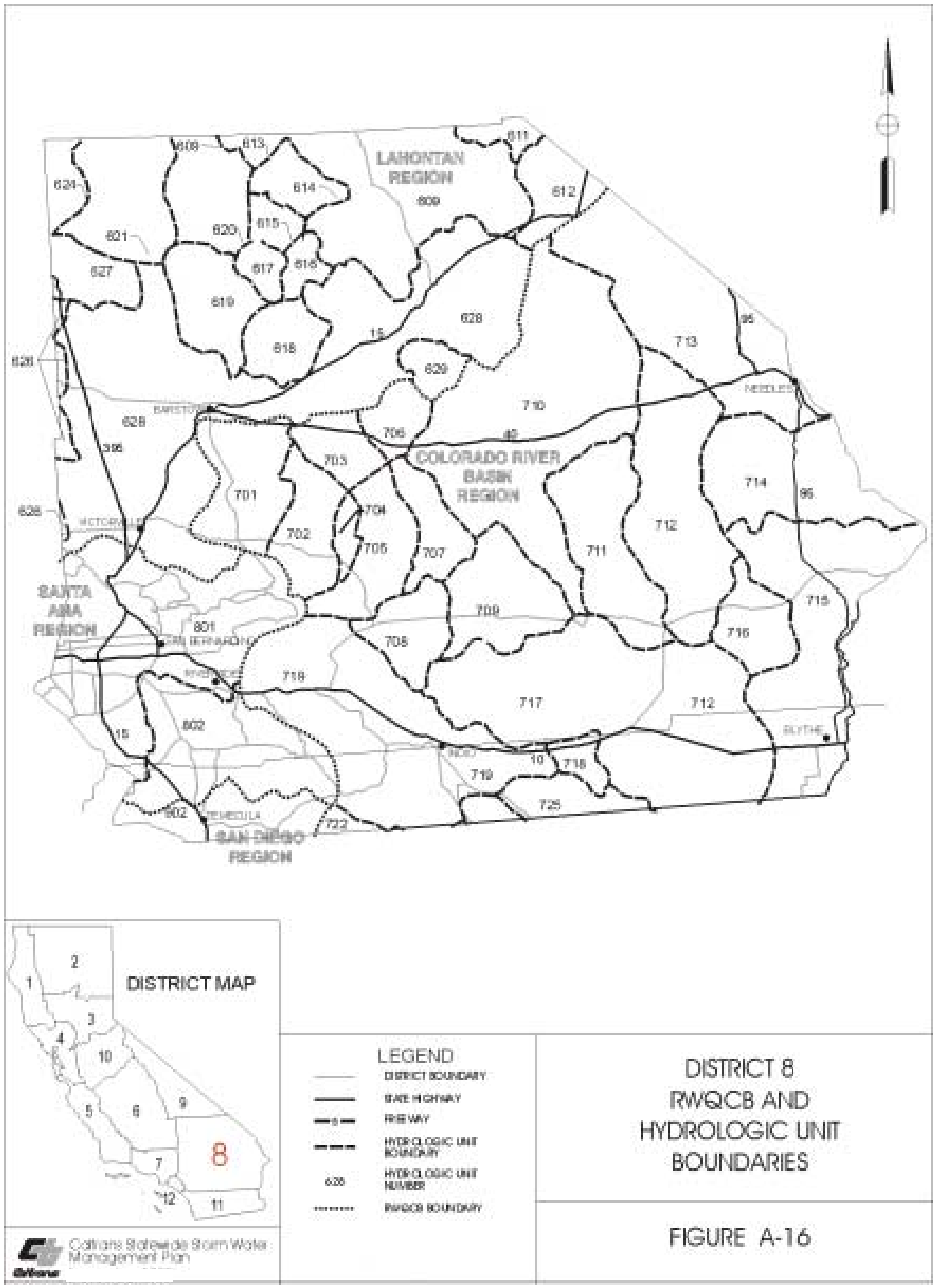

LAHONTAN REGION
COLORADO RIVER BASIN REGION
SANTA ANA REGION
SAN DIEGO REGION
BARSTOW
NEEDLES
VICTORVILLE
SAN BERNARDINO
RIVERSIDE
INDIO
BLYTHE
TEMECULA
DISTRICT MAP
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
HYDROLOGIC UNIT BOUNDARY
HYDROLOGIC UNIT NUMBER
RWQCB BOUNDARY
DISTRICT 8
RWQCB AND
HYDROLOGIC UNIT
BOUNDARIES
FIGURE A-16
Caltrans Statewide Storm Water Management Plan

TABLE A-16: DISTRICT 8 - HYDROLOGIC UNIT LIST

Lahontan Region (6)	
609	Amargosa HU
611	Mesquite HU
612	Ivanpah HU
613	Owlshead HU
614	Leach HU
615	Granite HU
616	Bicycle HU
617	Goldstone HU
618	Coyote HU
619	Superior HU
620	Ballarat HU
621	Trona HU
624	Indian Wells HU
626	Antelope HU
627	Cuddeback HU
628	Mojave HU
629	Broadwell HU
Colorado River Basin Region (7)	
701	Lucerne Lake HU
702	Johnson HU
703	Bessemer HU
704	Means HU
705	Emerson HU
706	Lavic HU
707	Deadman HU
708	Joshua Tree HU
709	Dale HU
710	Route 66 HU
711	Cadiz HU
712	Ward HU
713	Homer HU
714	Chemehuevis HU
715	Colorado HU
716	Rice HU
717	Chuckwalla HU
718	Hayfield HU
719	Whitewater HU
722	Anza Borrego HU
725	East Salton HU
728	Salton Sea HU
Santa Ana Region (8)	
801	Upper Santa Ana HU
802	San Jacinto HU
San Diego Region (9)	
902	Santa Margarita HU

A.9 DISTRICT 9

A.9.1 General

District 9 is located largely in the Trans-Sierra region of California. It includes Mono and Inyo Counties.

A.9.2 District 9 Facilities

District 9 boundaries, freeways and state highways are shown in Figure A-17. There are 1,207 centerline kilometers (750 miles) of freeway and state highway in District 9. District 9 freeways and highways are subject to an average of 3.7 million vehicle miles of travel each day. Names and locations of other Caltrans facilities, including maintenance stations, park-and-ride lots, roadside rest areas, vista points, toll plazas and inspection stations are listed in Table A-17.

District 9 lies within the boundaries of the Lahontan RWQCB. The relationship between District 9 and RWQCB boundary is shown in Figure A-18.

Most of District 9 facilities lie within the Great Basin Physiographic Province that is internally drained (Lahontan Region). A small portion of the southwest corner of the District is located in the Tulare Basin, and drains to Buena Vista Lake via the Kern River (Central Valley Region). The RWQCBs are divided into HUs as part of the regional basin plans. The RWQCB HUs located in District 9 are shown in Figure A-18 and listed in Table A-18.

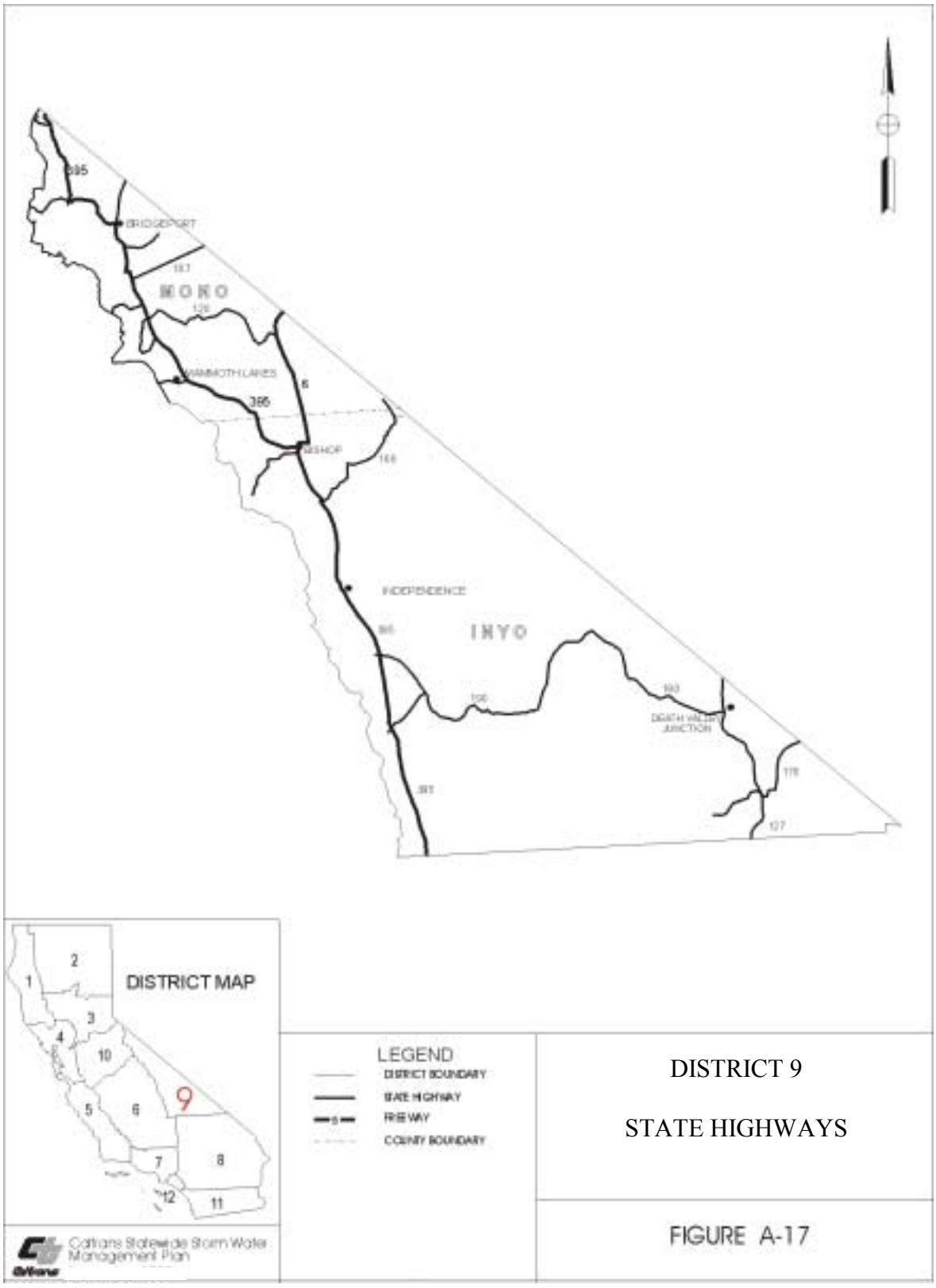

BRIDGEPORT
MONO
MAMMOTH LAKES
BISHOP
INDEPENDENCE
INYO
DEATH VALLEY JUNCTION
DISTRICT MAP
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
COUNTY BOUNDARY
DISTRICT 9
STATE HIGHWAYS
FIGURE A-17
Caltrans Statewide Storm Water Management Plan

TABLE A-17: DISTRICT 9 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS				
395	INYO	115.1	Bishop	District 9 Office
006	INYO	0.13	Bishop	Highway Maintenance
395	MNO	76.0	Bridgeport	Highway Maintenance
395	MNO	34.2	Crestview	Satellite
190	INYO	107.4	Death Valley	Highway Maintenance
395	INYO	73.8	Independence	Highway Maintenance
178	KERN	92.0	Inyokern	Highway Maintenance
395	INYO	19.0	McGee Creek	Highway Maintenance
58	KERN	112.3	Mojave	Highway Maintenance
127	INYO	14.7	Shoshone	Highway Maintenance
395	MNO	93.8	Sonora Junction	Highway Maintenance
202	KERN	10.5	Tehachapi	Highway Maintenance
395	MNO	51.6	Lee Vining	Highway Maintenance
395	INYO	51.6	Lone Pine	Satellite
395	MNO	3.2	Sherwin Grade	Sand and Salt Storage
58	KERN	90.72	Tehachapi	Sand and Salt Storage
395	MNO	63.6	Conway Summit	Satellite
203	MNO	2.2	Minaret	Satellite
395	INYO	32.7	Olancha	Satellite
VISTA POINTS				
395	MNO	69.2	Dogtown	Vista Point
395	MNO	62.5	Mono Lake	Vista Point
395	MNO	14.6	Lake Crowley	Vista Point
395	MNO	14.3	Lake Crowley	Vista Point
395	MNO	4.7	Sherwin Grade	Vista Point
395	MNO	4.1	Sherwin Grade	Vista Point
168	INYO	1.2	Aspendale	Vista Point
168	INYO	2.4	Intake 2	Vista Point
168	INYO	3.8	Big Tree	Vista Point
168	INYO	8.0	USFS Visitor Center	Vista Point
190	INYO	47.9	Father Crowley	Vista Point
190	INYO	65.5	Town's Pass	Vista Point
395	MNO	64.5	North Conway	Vista Point
395	MNO	42	Sandhouse	Vista Point
COMMERCIAL VEHICLE ENFORCEMENT FACILITIES				
58	KERN	81.0	Keene	
58	KERN	105.5	Cache Creek	
SAFETY ROADSIDE REST AREAS				
395	INY	R17.7	Coso Junction	17 mi. S of Jct. Route 395/190
395	INY	R83.9	Division Creek	10 mi. N of Independence
395	MNO	32.4	Crestview	1.6 mi. S of Crestview
PARK AND RIDE FACILITIES				
178	KERN	103.8	Ridgecrest	NW corner of Richmond Rd
TOLL ROAD AND TOLL BRIDGE PLAZAS				
None.				

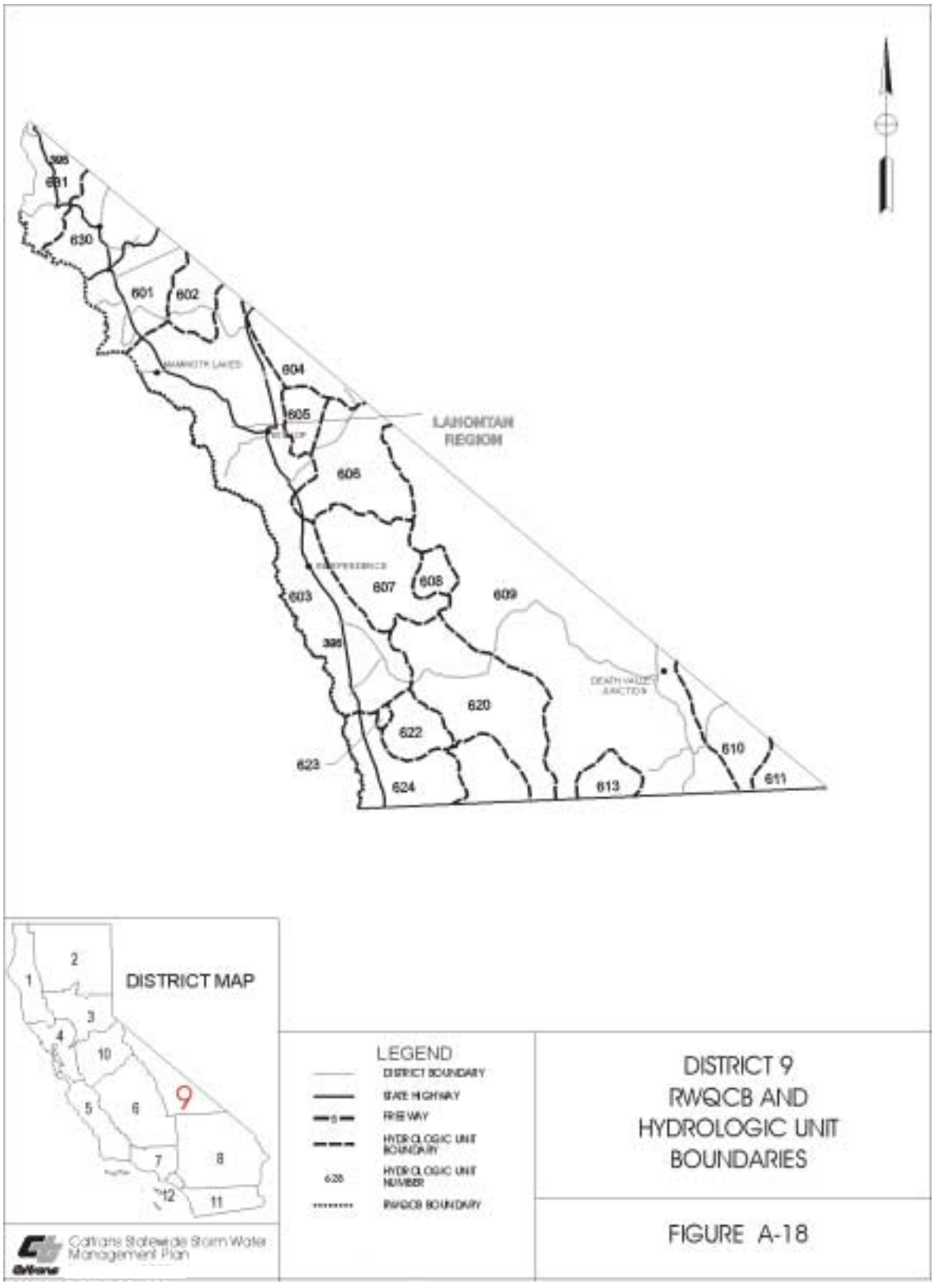

395
631
630
601
602
604
605
LAHONTAN REGION
606
607
608
609
603
395
620
622
623
624
613
610
611
DISTRICT MAP
1
2
3
4
10
5
6
9
7
8
12
11
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
5
FREEWAY
HYDROLOGIC UNIT BOUNDARY
606
HYDROLOGIC UNIT NUMBER
RWQCB BOUNDARY
DISTRICT 9
RWQCB AND
HYDROLOGIC UNIT
BOUNDARIES
FIGURE A-18
Caltrans Statewide Storm Water Management Plan

TABLE A-18: DISTRICT 9 HYDROLOGIC UNIT LIST

Lahontan Region (6)	
601	Mono HU
602	Adobe HU
603	Owens HU
604	Fish Lake HU
605	Deep Springs HU
606	Eureka HU
607	Saline HU
608	Race Track HU
609	Amargosa HU
610	Pahrump HU
611	Mesquite HU
613	Owlshead HU
620	Ballarat HU
621	Trona HU
622	Coso HU
623	Upper Cactus HU
624	Indian Wells HU
625	Fremont HU
630	East Walker River HU
631	West Walker River HU

A.10 DISTRICT 10

A.10.1 General

District 10 is located largely in the northern San Joaquin Valley and the Sierra Nevada to the east. It includes San Joaquin, Amador, Calaveras, Stanislaus, Merced, Mariposa, Tuolumne and Alpine Counties.

A.10.2 District 10 Facilities

District 10 boundaries, freeways and state highways are shown in Figure A-19. There are 2,152 centerline kilometers (1,337 miles) of freeway and state highway in District 10. District 10 freeways and highways are subject to an average of 25.1 million vehicle miles of travel each day. Names and locations of other Caltrans facilities, including maintenance stations, park-and-ride lots, roadside rest areas, vista points, toll plazas and inspection stations are listed in Table A-19.

Portions of District 10 lie within areas that are the responsibility of three RWQCBs. District 10 lies primarily within the boundaries of the Central Valley RWQCB. A small portion of the northeast corner of the District (Alpine County) is located in the Lahontan RWQCB. The northwest portion of the District lies in the San Francisco Bay RWQCB. The relationship between District 10 and RWQCB boundaries is shown in Figure A-20.

Most of District 10 facilities lie within the San Joaquin and Sacramento River watersheds, which drain to the Pacific Ocean via San Francisco Bay. The portion of the District in the Lahontan RWQCB is in the Great Basin Physiographic Province, which is internally drained. The RWQCBs are divided into HUs as part of the regional basin plans. The RWQCB HUs located in District 10 are shown in Figure A-20 and listed in Table A-20.

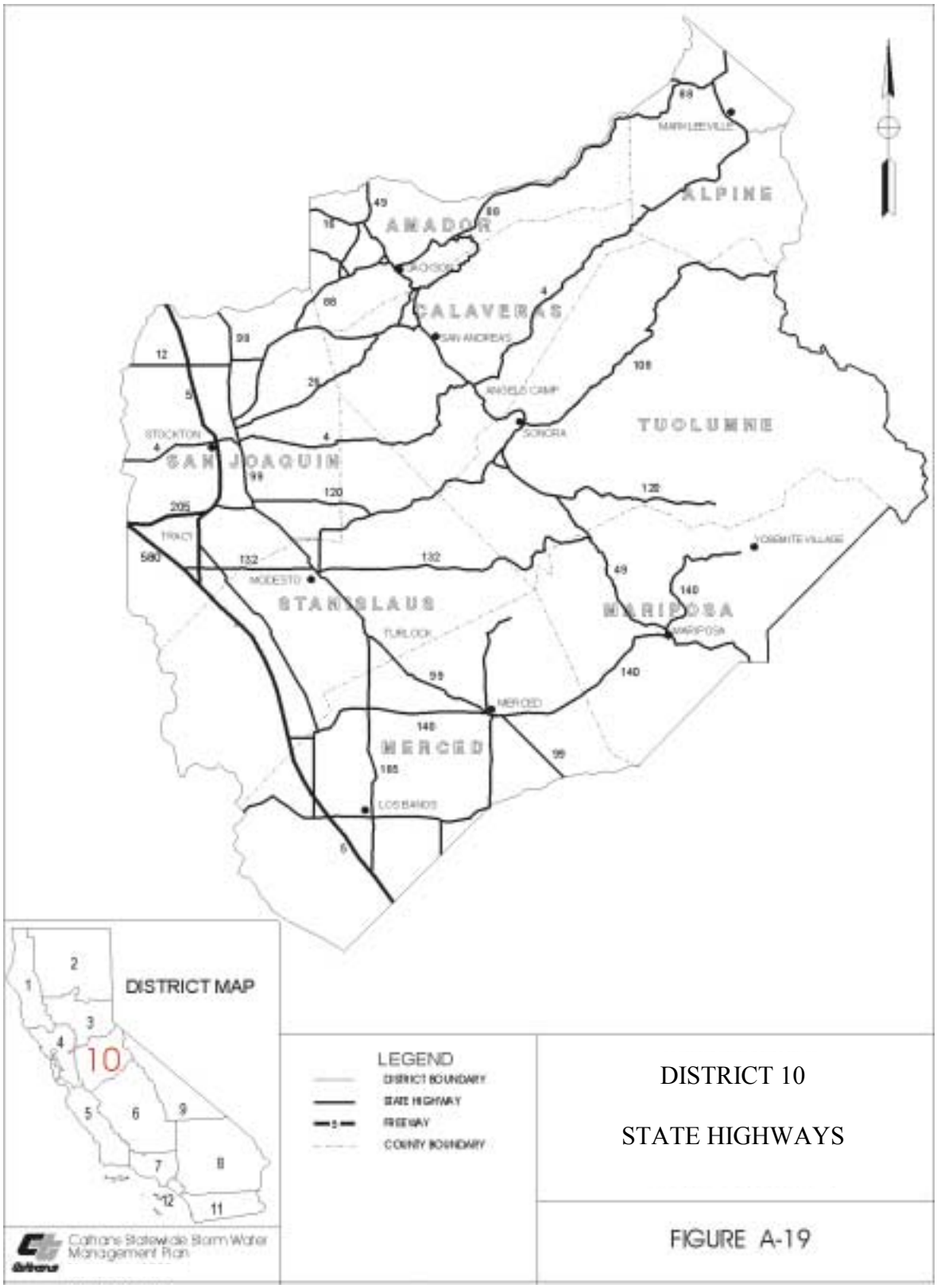

ALPINE
AMADOR
CALAVERAS
TUOLUMNE
SAN JOAQUIN
STANISLAUS
MARIPOSA
MERCED
STOCKTON
MODESTO
TURLOCK
MERCED
SONORA
YOSEMITE VILLAGE
MARIPOSA
LOS BANOS
DISTRICT MAP
10
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
COUNTY BOUNDARY
DISTRICT 10
STATE HIGHWAYS
FIGURE A-19
Caltrans Statewide Storm Water Management Plan

TABLE A-19: DISTRICT 10 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS				
4	SJ	18.0	Stockton	District 10 Office
5	SJ	16.2	Stockton	Landscape Maintenance
99	STA	14.5	Modesto Electrical	Special Crews
49	CAL	8.0	Altaville	Highway Maintenance
004	CAL	60.0	Cabbage Patch	Highway Maintenance
4	CAL	49.6	Camp Connell	Highway Maintenance
88	ALP	1.9	Caples Lake Winter	Highway Maintenance
49	MPA	44.8	Coulterville	Highway Maintenance
120	TUO	32.7	Groveland	Highway Maintenance
124	AMA	2.0	Ione	Highway Maintenance
99	SJ	30.7	Lodi	Highway Maintenance
108	TUO	19.0	Longbarn Crew	Highway Maintenance
152	MER	21.4	Los Banos	Highway Maintenance
99	MER	13.0	Merced	Highway Maintenance
140	MPA	29.4	Midpines	Highway Maintenance
99	STA	16.9	Modesto	Highway Maintenance
5	STA	15.9	Patterson	Highway Maintenance
88	AMA	54.0	Peddler Hill	Highway Maintenance
88	AMA	22.9	Pine Grove	Highway Maintenance
049	TUO	12.0	Sonora	Highway Maintenance
4	SJ	18.0	Stockton	Highway Maintenance
205	SJ	6.0	Tracy	Highway Maintenance
026	CAL	34.8	West Point	Highway Maintenance
89	ALP	21.7	Woodfords	Highway Maintenance
120		50.8	Hardin Hill	Sand and Salt Storage
88		66.5	Mills Place	Sand and Salt Storage
88		46.5	Mudsprings	Sand and Salt Storage
88		13.4	Picketts	Sand and Salt Storage
49		8.0	Tip Top	Sand and Salt Storage
VISTA POINTS				
88	ALP	5.6	Carson Pass	Vista Point
88	AMA	63.9		Vista Point
49	CAL	5.6		Vista Point
88	AMA	52.6	Peddler Hill	Vista Point
88	AMA	59.8	Shotrock (USFS)	Vista Point
88	AMA	61.5	Devil's Garden	Vista Point
88	AMA	63.1		Vista Point
4	ALP	3.4		Vista Point
49	CAL	0.5		Vista Point
49	MPA	3.6		Vista Point
49	MPA	9.0		Vista Point
49	MPA	34.6		Vista Point
5	STA	5.2	Dos Amigos	Vista Point
680		2.8		Vista Point
5	STA	3.8		Vista Point

TABLE A-19: DISTRICT 10 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
VISTA POINTS (continued)				
5	STA	12.8		Vista Point
120	TUO	19.3	Don Pedro Lake	Vista Point
120	TUO	21.6	Don Pedro Lake	Vista Point
120	TUO	44.6	Rim of the World (USFS)	Vista Point
35		14.1	Saratoga Gap	Vista Point
COMMERCIAL VEHICLE ENFORCEMENT FACILITIES				
4	CAL	29.7	Murphys	Westbound (WB)
5	MER	23.4	Santa Nella	Southbound (SB)
5	MER	23.5	Santa Nella	Northbound (NB)
99	MER	0.9	Chowchilla River	NB
99	MER	32.7	Livingston	SB
108	TUO	17.2	Lyons Dam	Westbound (WB)
SAFETY ROADSIDE REST AREAS				
5	STA	27.2	Westley	0.9 mi. S of San Joaquin Co Line; NB & SB
99	STA	0.5	Enoch Christoffersen	NB & SB
5	MER	0.7	John “Chuck” Erreca	0.7 mi. N of Fresno Co Line
PARK AND RIDE FACILITIES				
99	SJ	31.0	Lodi	NE corner Route 12 (Victor Rd) in Lodi
12	SJ	10.3	Thornton Road	SE corner Thornton Road IC, W of Lodi
99	SJ	22.9	Hammer Lane	SW corner Hammer Lane in Stockton
120	TUO	32.2	Ponderosa Lane	11878 Ponderosa Lane in Groveland
TOLL ROAD AND TOLL BRIDGE PLAZAS				
None.				

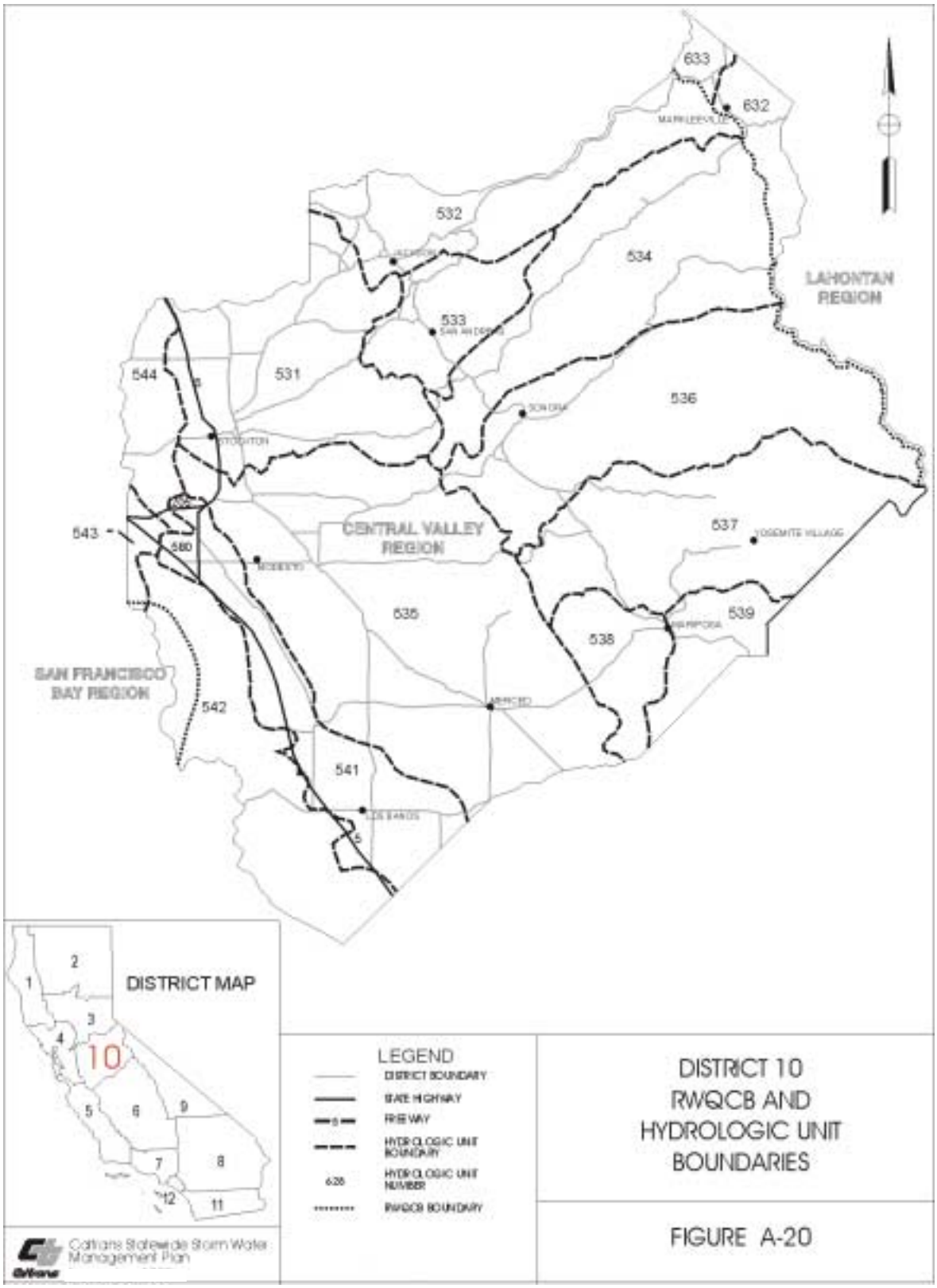

633
632
532
534
LAHONTAN REGION
533
544
531
536
543
CENTRAL VALLEY REGION
537
535
539
538
SAN FRANCISCO BAY REGION
542
541
DISTRICT MAP
10
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
HYDROLOGIC UNIT BOUNDARY
HYDROLOGIC UNIT NUMBER
RWQCB BOUNDARY
DISTRICT 10
RWQCB AND
HYDROLOGIC UNIT
BOUNDARIES
FIGURE A-20
Caltrans Statewide Storm Water Management Plan

TABLE A-20: DISTRICT 10 - HYDROLOGIC UNIT LIST

San Francisco Bay Region (2)	
204	South Bay Basin HU
205	Santa Clara Basin HU
Central Valley Region (5)	
510	Sacramento Delta HU
531	North Valley Floor HU
532	Middle Sierra HU
533	Upper Calaveras HU
534	Stanislaus HU
535	San Joaquin Valley HU
536	Tuolumne River HU
537	Merced River HU
538	Mariposa HU
539	Ahwahnee HU
541	Delta - Mendota Canal HU
542	Middle West Side HU
543	North Diablo Range HU
544	San Joaquin Delta HU
Lahontan Region (6)	
632	East Fork Carson River HU
633	West Fork Carson River HU

A.11 DISTRICT 11

A.11.1 General

District 11 covers the southern end of California. It includes San Diego and Imperial Counties.

A.11.2 District 11 Facilities

District 11 boundaries, freeways and state highways are shown in Figure A-21. There are 1,659 centerline kilometers (1,031 miles) of freeway and state highway in District 11. District 11 freeways and highways are subject to an average of 40.0 million vehicle miles of travel each day. Names and locations of other Caltrans facilities, including maintenance stations, park-and-ride lots, roadside rest areas, vista points, toll plazas and inspection stations are listed in Table A-21.

Portions of District 11 lie within the areas that are the responsibility of two RWQCBs: the Colorado River Basin RWQCB and the San Diego RWQCB. The relationship between District 11 and RWQCB boundaries is shown in Figure A-22.

The western portion of District 11 drains directly to the Pacific Ocean (San Diego Region). The eastern portion of the District drains to the Salton Sea and the Colorado River (Colorado River Basin Region). The RWQCBs are divided into HUs as part of the regional basin plans. The RWQCB HUs located in District 11 are shown in Figure A-22 and listed in Table A-22.

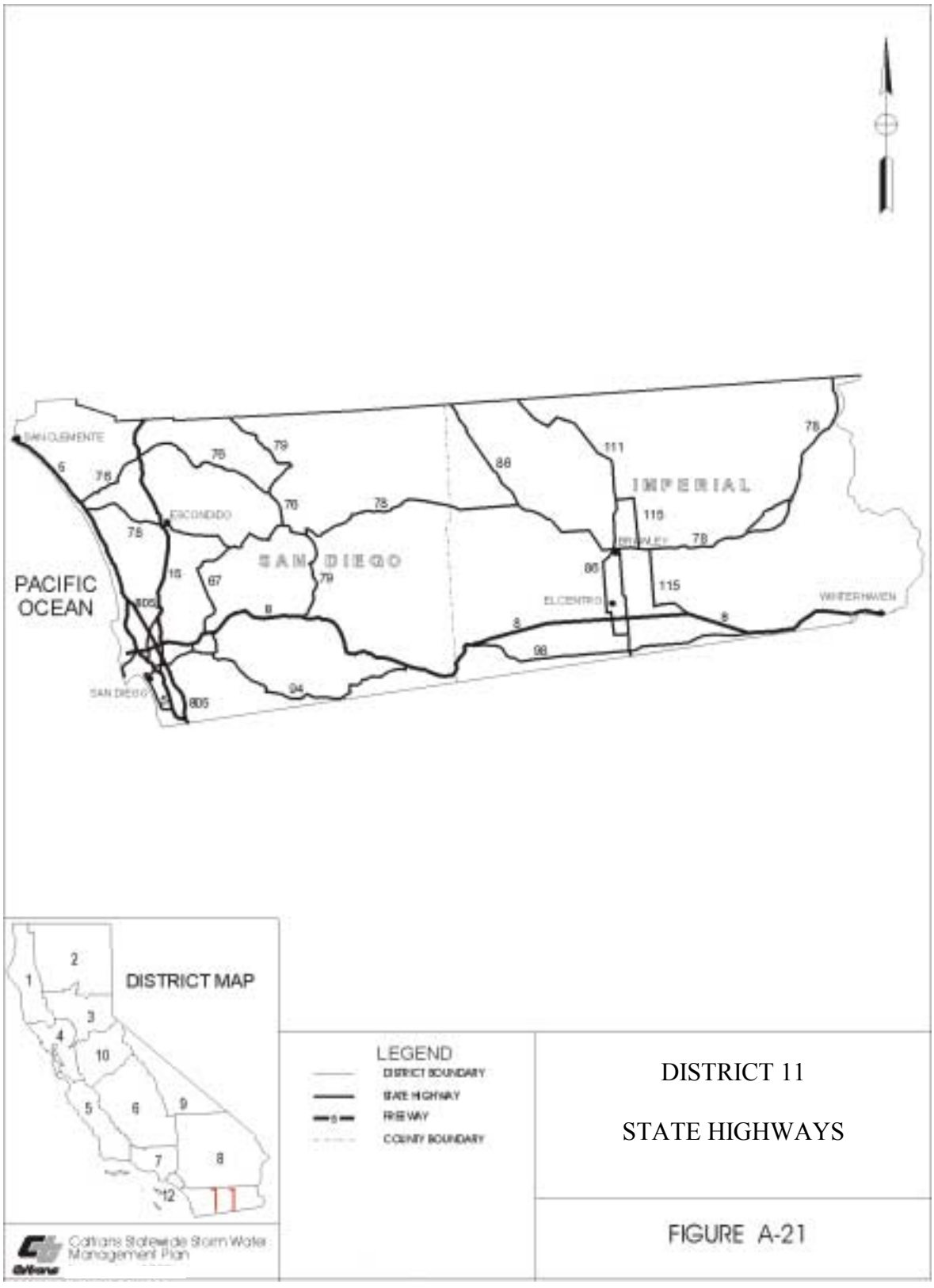

PACIFIC OCEAN
SAN DIEGO
IMPERIAL
SAN CLEMENTE
ESCONDIDO
EL CENTRO
WINTERHAVEN
DISTRICT MAP
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
COUNTY BOUNDARY
DISTRICT 11
STATE HIGHWAYS
FIGURE A-21
Caltrans Statewide Storm Water Management Plan

TABLE A-21: DISTRICT 11 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS				
805		21.8	Kearny Mesa	Highway Maintenance
805		12.3	Imperial	Landscape Maintenance
117		3.8	Otay	Landscape Maintenance
79		28.3	Lake Henshaw	Highway Maintenance
78		16.0	Escondido	Highway Maintenance
75		20.3	Coronado Toll Bridge	Highway Maintenance
52		0.0	Santee	Highway Maintenance
8		38.0	Descanso	Highway Maintenance
8		4.4	Camino Del Rio	Landscape Maintenance
5		47.0	Carlsbad	Highway Maintenance
5		20.1	Pacific Hwy	Landscape Maintenance
5		9.1	Chula Vista	Highway Maintenance
896	IMP	8.5	El Centro	Highway Maintenance
78	IMP		Brawley	Highway Maintenance
98	IMP	56.6	Midway	Highway Maintenance
8	IMP	66.5	Boulevard	Highway Maintenance
15	SD	12.527	Chollas	Structural Bridge Operations
COMMERCIAL VEHICLE ENFORCEMENT FACILITIES				
905		12.0	Otay Mesa	Northbound (NB)
15		53.5	Rainbow	Southbound (SB)
5		R67.4	San Onofre	SB
5		R67.1	San Onofre	NB
7	IMP	.1	Calexico	NB
8	IMP	R89.5	Winterhaven	Westbound (WB)
VISTA POINTS				
8		35.5	Viejas Grade	Vista Point
5		63.7	Las Flores	Vista Point
5		39.1	Manchester	Vista Point
8		1.0	Mountain Springs	Vista Point
PARK AND RIDE FACILITIES				
805		26.9	Mira Mesa Blvd	SE corner Mira Mesa & Carroll Canyon Rd
805		24.4	Governor Dr	NW corner Governor Dr in University City
805		8.6	Sweetwater	SE corner Sweetwater Rd near Chula Vista
125		13.0	Grossmont Blvd	NE corner Route 125 & Grossmont Blvd
125		13	Bancroft-Grossmont	SW 5230 Bancroft Dr
125		13.0	Troy/Sweetwater	SW corner Troy & Sweetwater in Lemon Grove
94		12.8	Sweetwater Springs	NE corner Route 94 & Sweetwater Springs
94		8.9	Lemon Gove	NW corner Lemon Grove IC
94			Avocado Blvd	NE corner Avocado Blvd at Route 94
78		6.9	Sunset in Vista	SW corner Sunset Dr IC in Vista
78		3.3	College Blvd	SW corner College Blvd in Oceanside
78			Broadway	Route 78 at Broadway
76		17.3	Hwy 76 & 15	NW corner Route 15 near Pala

TABLE A-21: DISTRICT 11 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
76		2	Mission Ave/Frontier Dr	SE, Oceanside
76			Maxson St	Maxson St and Barnes
67		R3.9	Riverford	SE corner Riverford Rd in Lakeside
67		R5.5	Mapleview	NE corner Mapleview St & Route 67 in Lakeside
PARK AND RIDE FACILITIES (continued)				
56			Ted Williams Pkwy	Ted Williams Pkwy and Sabre Springs Pkwy
56			Rancho Carmel	NE 10155 Rancho Carmel Dr
54		16.0	Madison in El Cajon	N side near Main St
54		15.0	Washington Ave	S side near Jamacha Rd
54		2.5	Jamacha Blvd	S side Jamacha Blvd near Sweetwater
15		18	Poway-Sabre Springs	NW 12668 Sabre Spring Blvd (Mall)
15			Rancho Bernardo	NW, Rancho Bernardo Road
15		32.9	El Norte Pkwy	SE corner El Norte Pkwy IC
15		21.2	Elephant Bar	West Bernardo Dr
15		18.2	Community Rd	SW corner Community & Twin Peaks Roads
15		18.2	Penasquitos	SW corner Rancho Penasquitos Blvd
15		15.8	Mira Mesa	NW corner Mira Mesa IC
52		13	Mission Gorge/Big Rock Dr	SE Santee
15			Deer Springs Rd	Deer Springs Rd at Serendipity Lane
15			Mt. Meadows Rd	Mt. Meadows Rd at Champagne Blvd
15			Gopher Canyon Rd	Gopher Canyon Rd at Champagne Blvd
15			Via Rancho Pkwy	North County Fair
8		37.8	Japatul Valley	NW corner Japatul Valley Rd in Descanso
8		21.8	Lake Jennings	NE corner Lake Jennings Park Rd
8		20.1	Los Coches	SE corner Camino Canada in Glenview
8		13	Severin-Murray	S side Murray Dr abutting Route 8
		12.7	Fuerte Dr	SW corner I-8 & Fuerte Dr
8		9.7	La Mesa	SE corner Alvarado Rd & 70th St
8		11	Severin-Bancroft	SW, 5480 Bancroft Dr
8		17	E Main-Madison	NE, 1470 E Madison
8			Taylor	SW, 4300 Taylor St
5		39.8	Birmingham	NE corner Birmingham Dr in Cardiff
5		R32.9	Carmel Valley	SW corner Carmel Valley Rd near Del Mar
5		R26.8	Gilman Dr	SW corner Gilman Dr IC
5		44	La Costa	NE, 710 La Costa Ave
15		15	Black Mtn	Black Mtn at Hillery Dr
SAFETY ROADSIDE REST AREAS				
8		R49	Buckman Springs	3.3 mi. E of Pine Valley
5		R59.4/R6	Aliso Creek	5.8 mi. N of Oceanside; NB & SB
111	IMP	29.4	Two Rivers	2.5 mi. S of Calipatria
8	IMP	R31.2	Sunbeam	6 mi. W of El Centro; EB & WB
8	IMP	80.2	Sand Hills	20 mi. W of Arizona State Line
TOLL ROAD AND TOLL BRIDGE PLAZAS				
75		20.284	San Diego/Coronado	San Diego – Coronado Bridge

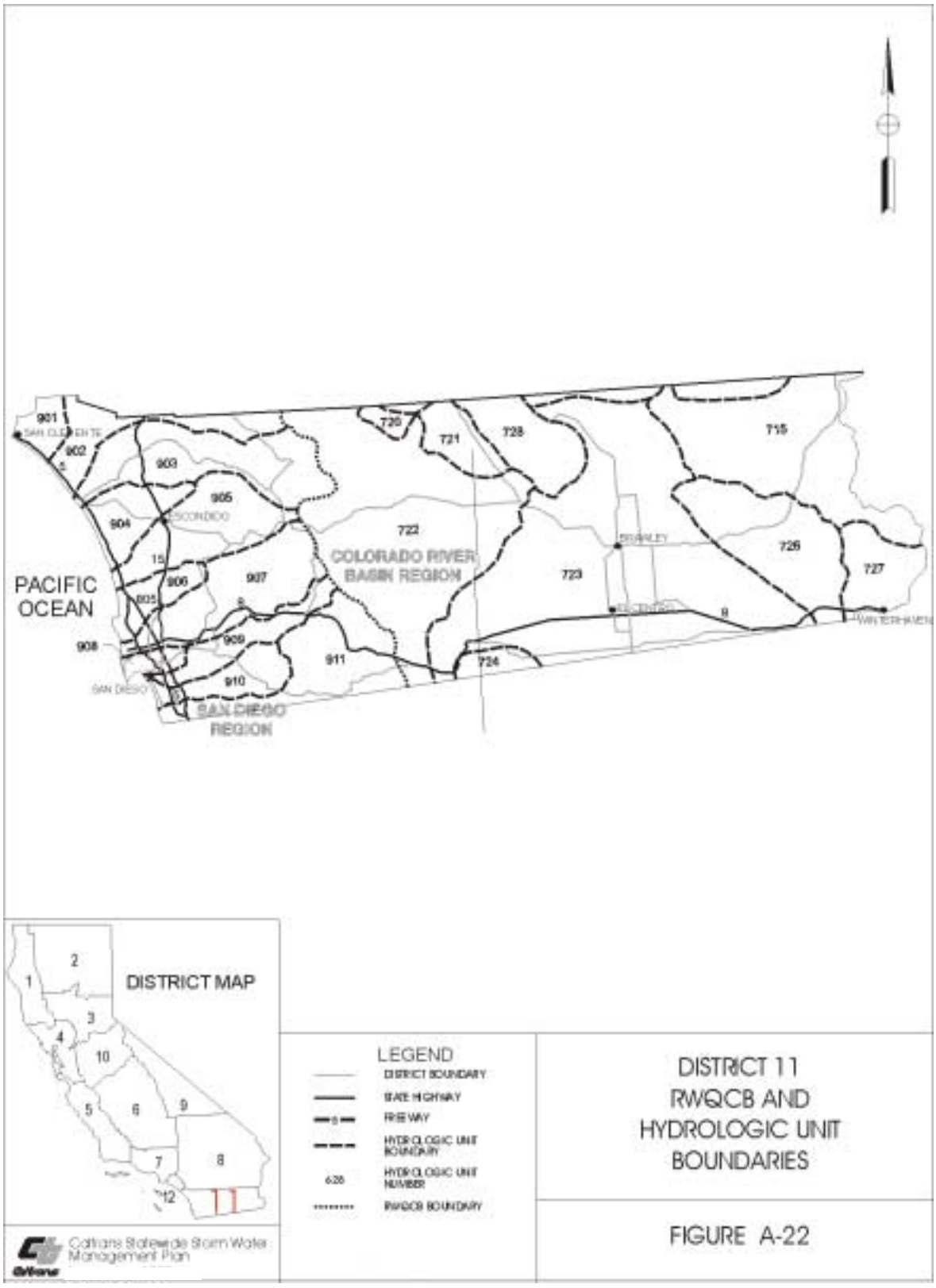

PACIFIC OCEAN
COLORADO RIVER BASIN REGION
SAN DIEGO REGION
901
902
903
904
905
906
907
908
909
910
911
720
721
728
715
722
723
724
726
727
DISTRICT MAP
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
HYDROLOGIC UNIT BOUNDARY
HYDROLOGIC UNIT NUMBER
RWQCB BOUNDARY
DISTRICT 11
RWQCB AND
HYDROLOGIC UNIT
BOUNDARIES
FIGURE A-22
Caltrans Statewide Storm Water Management Plan

TABLE A-22: DISTRICT 11 - HYDROLOGIC UNIT LIST

Colorado River Basin Region (7)	
712	Ward HU
719	Whitewater HU
720	Clark HU
721	West Salton HU
722	Anza Borrego HU
723	Imperial HU
724	Davis HU
725	East Salton HU
726	Amos - Ogilby HU
727	Yuma HU
728	Salton Sea HU
San Diego Region (9)	
901	San Juan HU
902	Santa Margarita HU
903	San Luis Rey HU
904	Carlsbad HU
905	San Dieguito HU
906	Penasquitos HU
907	San Diego
908	Pueblo San Diego HU
909	Sweetwater HU
910	Otay HU
911	Tiyuana HU

A.12 DISTRICT 12

A.12.1 General

District 12 covers Orange County.

A.12.2 District 12 Facilities

District 12 boundaries, freeways and state highways are shown in Figure A-23. There are 447 centerline kilometers (279 miles) of freeway and state highway in District 12. District 12 freeways and highways are subject to an average of 32.6 million vehicle miles of travel each day. Names and locations of other Caltrans facilities, including maintenance stations, park-and-ride lots, roadside rest areas, vista points, toll plazas and inspection stations are listed in Table A-23.

District 12 is located within the boundaries of the Santa Ana RWQCB and the San Diego RWQCB. The relationship between District 12 and RWQCB boundaries is shown in Figure A-24.

District 12 facilities lie within the San Gabriel River, Santa Ana River and San Juan Creek watersheds that drain directly to the Pacific Ocean. The RWQCBs are divided into HUs as part of the regional basin plans. The RWQCB HUs located in District 12 are shown in Figure A-24 and listed in Table A-24.

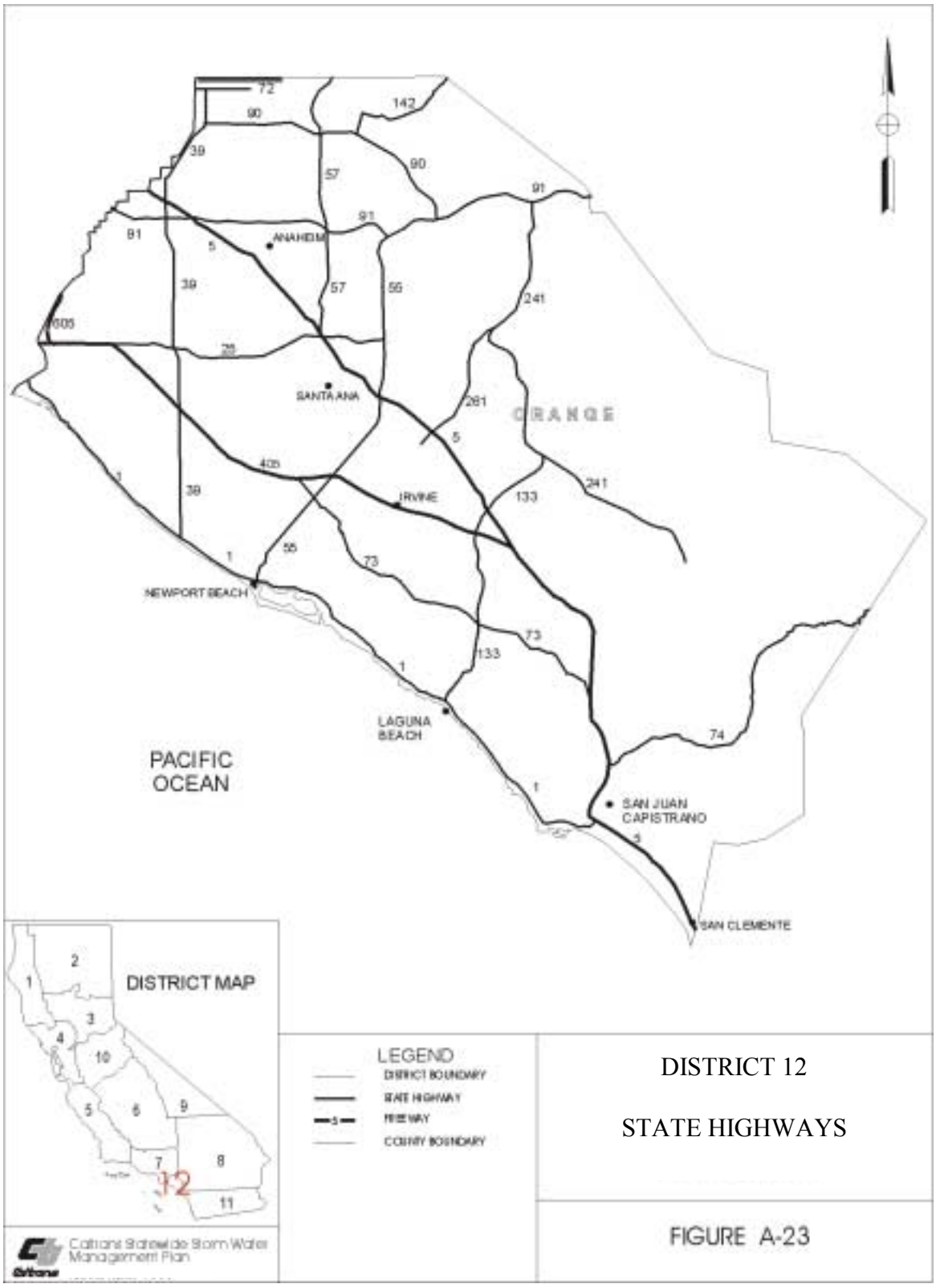

72
90
142
39
57
90
91
91
91
5
ANAHEIM
39
57
55
241
605
22
SANTA ANA
261
ORANGE
5
405
241
39
IRVINE
133
1
55
73
NEWPORT BEACH
73
133
1
LAGUNA BEACH
74
PACIFIC OCEAN
1
SAN JUAN CAPISTRANO
5
SAN CLEMENTE
DISTRICT MAP
12
Caltrans Statewide Storm Water Management Plan
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
FREEWAY
COUNTY BOUNDARY
DISTRICT 12
STATE HIGHWAYS
FIGURE A-23

TABLE A-23: DISTRICT 12 FACILITIES

RTE	CO	PM	NAME	DESCRIPTION
MAINTENANCE STATIONS				
57		13.5	Batavia	Highway Maintenance
57		21.4	Brea	Highway Maintenance
22		13.0	Orange	Highway Maintenance
5		8.8	San Juan Capistrano	Highway Maintenance
39		10.7	Stanton	Highway Maintenance
405		20.7	Bolsa Chica	Landscape Maintenance
57		21.4	Brea	Landscape Maintenance
55		26.5	Costa Mesa	Landscape Maintenance
5		13.7	Forbes	Landscape Maintenance
5		23.9	Sand Canyon	Landscape Maintenance
5		8.8	San Juan Capistrano	Landscape Maintenance
VISTA POINTS				
None.				
COMMERCIAL VEHICLE ENFORCEMENT FACILITIES				
91		13.8	Peralta	Westbound (WB)
91		R13.6	Peralta	Eastbound (EB)
SAFETY ROADSIDE REST AREAS				
None.				
PARK AND RIDE FACILITIES				
5	ORA	25.0	Jeffery	I-5 at Jeffery Road in Irvine
5	ORA	10.9	Junipero Serra	SE corner of Junipero Serra & I-5 in San Juan Capistrano
55	ORA	16.7	Lincoln	SW corner SR-55 & Lincoln in Orange
TOLL ROAD AND TOLL BRIDGE PLAZAS				
RTE	**CO**	**PM**	**NAME**	**DESCRIPTION**
241	ORA	36.0	Windy Ridge	Toll Plaza
261	ORA	2.0	Irvine Ranch	Toll Plaza
261	ORA	2.7	Portola Parkway	Toll Plaza
73	ORA	18.7	Catalina	Toll Plaza
133	ORA	13.2	Orange Grove	Toll Plaza
241	ORA	25.9	Tomato Springs	Toll Plaza
91	ORA	16.4	Gypsum Canyon	Toll Plaza

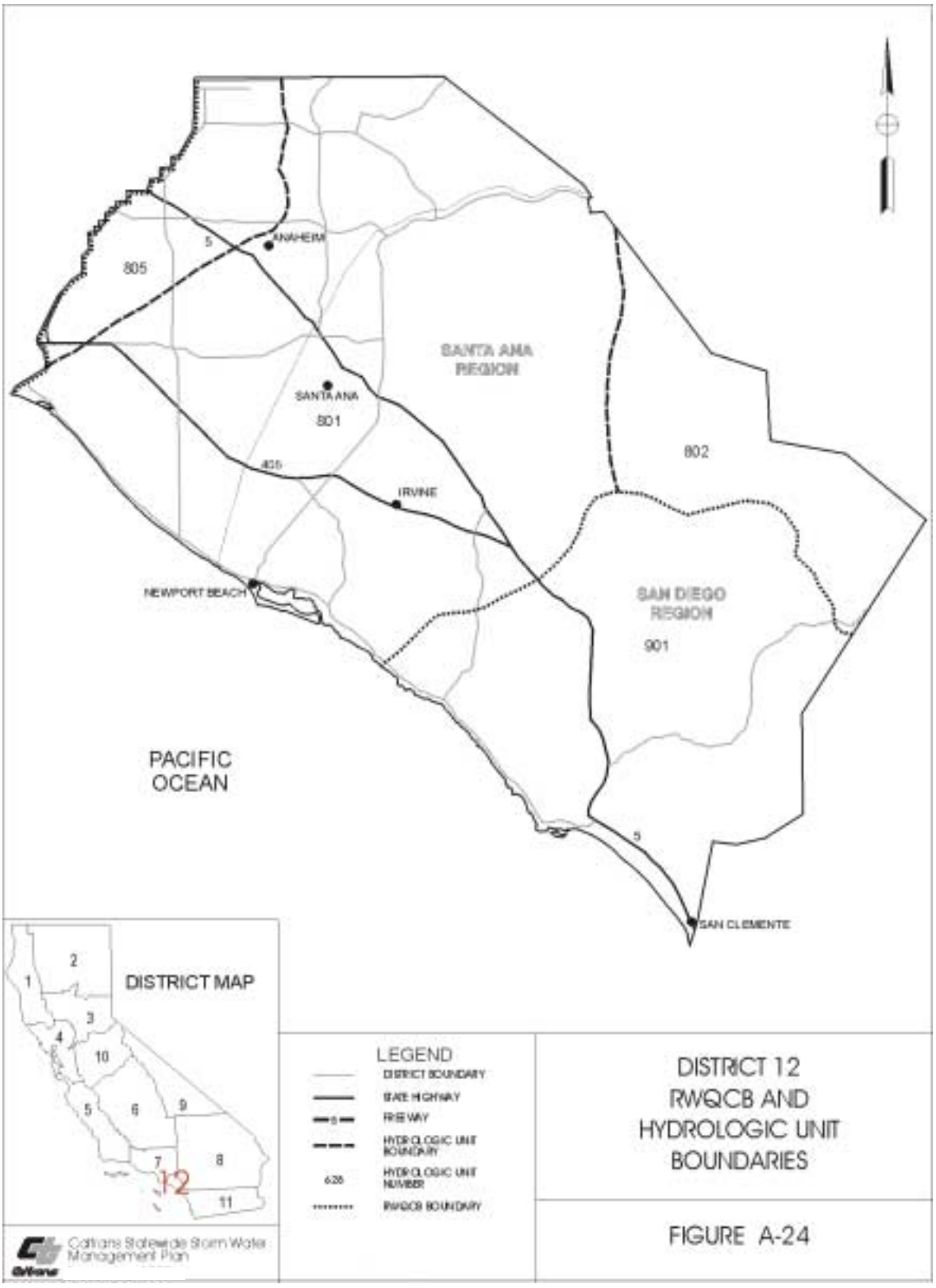

ANAHEIM
5
805
SANTA ANA REGION
SANTA ANA
801
802
405
IRVINE
NEWPORT BEACH
SAN DIEGO REGION
901
PACIFIC OCEAN
5
SAN CLEMENTE
DISTRICT MAP
1
2
3
4
5
6
7
8
9
10
11
12
LEGEND
DISTRICT BOUNDARY
STATE HIGHWAY
5
FREEWAY
HYDROLOGIC UNIT BOUNDARY
626
HYDROLOGIC UNIT NUMBER
RWQCB BOUNDARY
DISTRICT 12
RWQCB AND
HYDROLOGIC UNIT
BOUNDARIES
FIGURE A-24
Caltrans Statewide Storm Water Management Plan

TABLE A-24: DISTRICT 12 - HYDROLOGIC UNIT LIST

Santa Ana Region (8)	
801	Upper Santa Ana HU
802	San Jacinto HU
805	Lower Santa Ana HU
San Diego Region (9)	
901	San Juan HU

B.1 EVALUATION AND APPROVAL PROCEDURES

B.1.1 Overview

This appendix provides additional information on the Department's process for adopting Best Management Practices (BMPs) for inclusion in the Statewide Storm Water Management Plan (SWMP). Section 3 provides a general description of the BMP identification, evaluation and approval process.

This Appendix supplements Section 3 by providing:

- Discussion of the BMP evaluation process;
- Discussion of BMP evaluation criteria; and
- Identification of BMPs by category.

For municipal-type storm water systems, the technology-based requirements in the federal storm water regulations call for the implementation of controls (i.e., procedures and BMPs) to reduce the discharge of pollutants to the "maximum extent practicable" (MEP). For construction projects that disturb areas of 5 acres or more (reduced to 1 acre on March 10, 2003), the technology-based requirements include the use of "best conventional pollutant control technology" (BCT) and "best available technology economically achievable" (BAT). See Table B-1 for a description of the categories of BMPs (i.e., IA, IB, II, and III).

TABLE B-1: BMP EVALUATION RESPONSIBILITIES

Storm Water Advisory Team	BMP Category	BMP Description
Maintenance SWAT	IA	***Maintenance BMPs:*** litter pickup, toxics control, street sweeping, etc.
Project Design SWAT	IB	***Design Pollution Prevention BMPs:*** permanent soil stabilization systems, etc.
Construction SWAT	II	***Construction Site BMPs:*** temporary runoff control
Water Quality SWAT	III	***Treatment BMPs:*** permanent treatment devices and facilities

BMP Best Management Practices
SWAT Storm Water Advisory Team

B.1.2 BMP Evaluation Criteria

When evaluating candidate BMPs for listing in the Statewide SWMP, the Storm Water Advisory Teams (SWATs) will consider relative effectiveness, technical feasibility, costs and benefits, and fiscal/legal feasibility. Because the goals of the various BMP categories are somewhat different, there will be variations in how much emphasis is given to each of the evaluation criteria. This section describes criteria applicable to all BMPs.

General Criteria Applicable to All BMP Categories

Relative Effectiveness: A recommended BMP should generally demonstrate equal or greater pollution control benefits than existing pollution or water quality control practices. Effectiveness may be assessed in terms of specific pollutants of concern (e.g., sediment or trash) or groups of pollutants. If there are no existing pollution or water quality control measures currently being implemented, then the recommended BMP will be considered effective by default.

Technical Feasibility: A recommended BMP must be technically feasible. The Department must be able to implement the BMP within the context of the state highway system. Feasibility also includes health and safety concerns. BMPs that substantially increase the risk to the Department's workers or the public will be considered not feasible.

Costs and Benefits: The pollution control benefits must have a reasonable relationship to the costs. The costs and benefit analysis will consider the impacts to the waters of the State on a statewide basis that are being mitigated or controlled through implementing the SWMP throughout the State.

Legal and Institutional Constraints: The recommended BMP cannot compromise the Department's compliance with other laws. For example, the Department must provide drainage under roadways at regular intervals to prevent water from accumulating upgradient and threatening the integrity of the roadbed. The Department cannot legally block historic drainage patterns or systems (e.g., runoff from farmland).

B.1.3 Flexible and Innovative BMP Implementation

District Resident Engineers are expected to modify and improve construction site (temporary) BMPs to address site-specific needs and to maximize pollutant control. Innovative or modified construction site (temporary) BMPs developed in the Districts will be referred to the SWATs for evaluation for possible statewide implementation. Modifications to approved treatment BMP designs and operations must be reviewed and approved by the Water Quality SWAT, because modifications to design, operation, or maintenance could negatively impact pollutant removal or maintainability.

B.1.4 General Description of BMP Groupings

As BMPs are evaluated, they are assigned to the following groupings:

- **Approved:** These BMPs have been approved by the Department for implementation. Implementation is dependent on conditions/applicability of deployment described as part of the BMP. In some cases, the conditions of deployment include regional factors.

- **Further research needed:** Statewide implementation of BMPs in this grouping is deferred, unless noted otherwise, until further research is completed.
- **Rejected:** These BMPs have been evaluated and rejected.

The remainder of this appendix provides brief descriptions of the BMPs. Additional information regarding the conditions of deployment and implementation of approved BMPs is included in the Statewide Storm Water Quality Practice Guidelines (the Guidelines).

B.2 BMP CATEGORY IA: MAINTENANCE BMPs

B.2.1 Overview

The Department submitted a draft SWMP to the SWRCB and RWQCBs on August 31, 2000. The staff of the SWRCB and RWQCBs did not find the maintenance activity BMPs to provide sufficient specificity to ensure an effective BMP program. To address staff concerns, the Department revised the text below to provide more specificity and detail that will ensure field personnel responsible for implementing the BMPs understand what is required and that the BMPs are implemented effectively. The text below also discusses the rationale for text that has been deleted at the end of Section B.2.1.

Maintenance BMPs (see Section B.6 for a tabular summary of all BMPs) are pollution prevention BMPs designed to reduce the discharge of pollutants associated with maintenance activities to the MEP. Maintenance BMPs apply to ongoing maintenance of existing roadways, newly constructed BMPs and facilities and other facilities owned or operated by the Department.

Many maintenance BMPs implemented in Districts operating under requirements of pre-existing National Pollutant Discharge Elimination System (NPDES) permits were used in the development of BMPs for statewide application. These pre-existing BMPs were reviewed to determine if they would be appropriate for statewide implementation. Most pre-existing maintenance BMPs were included in the Statewide SWMP.

Before adopting BMPs used by the Districts for statewide use, a comprehensive assessment of maintenance activities was performed to ensure that potential sources of pollutants were identified. Maintenance activities and subtasks were itemized, and potential pollutant sources (e.g., spills or erosion) associated with each subtask were listed. Next, the potential pollutants were identified (e.g., asphalt might be spilled or sediment could be eroded). Finally, BMPs were identified that correspond to the sources and types of pollutants.

The process for selecting maintenance BMPs is described in this section of Appendix B. A brief description of each maintenance activity with key subtasks is provided. After describing the activity, the potential sources of pollutants and pollutants are identified. Finally, the BMPs needed to protect water quality when performing the activity are identified. A complete listing of approved maintenance BMPs is provided in Table B-4 at the end of this appendix. Section 2 of the Guidelines includes activity tables that provide a more extensive breakdown of this process.

These tables were included in Section 2 of the Guidelines instead of Appendix B to facilitate their use by field personnel who may need a detailed breakdown of the activity along with detailed guidance for BMP implementation.

The Department has grouped similar maintenance activities into a series of families. For example A1, Asphalt Cement Crack and Joint Grinding/Sealing is in the Flexible Pavement "family," and J1, Pump Station Cleaning is in the Other Structures "family." Within each activity, the Department's employees conduct subtasks that are or could be sources of pollutants in storm water runoff or non-storm water discharges. A group of BMPs associated with each maintenance activity and subtasks has been developed to serve as a "tool box" for application and use by maintenance personnel. The appropriate applications and implementation guidance for each BMP are discussed in the Guidelines.

B.2.2 Maintenance Activities with Associated Approved BMPs

A Family (Flexible Pavement)

The general objectives of flexible pavement (asphalt) maintenance activities are to provide safety, preserve the state's capital investment and maintain a riding quality that is satisfactory to the traveling public. Road surface maintenance typically involves the use of asphalt and other materials to create impervious surface areas or to repair existing road surfaces. Pollution control activities focus on ensuring that removed materials and applied asphalt remain controlled and are not released to the environment.

A1 – Asphalt Cement Crack and Joint Grinding/Sealing

Flexible pavement is susceptible to cracking, and the cracks should be repaired to prevent the entrance of moisture into the subgrade. In some instances, cracks need to be cleaned prior to filling. A stiff broom, compressed air, or a gouge-type tool or mechanical router may be used to clean the cracks. The cracks are then filled with rubberized sealant, emulsion or liquid asphalt. Fine sand may be applied to the surface of the crack after it has been filled. The repair of slippage cracks requires the removal of the surface layer prior to patching with mixed asphaltic concrete. Other subtasks associated with this activity include vehicle operation, disposal of removed material and grindings, post-sweeping and possibly a portable toilet.

Potential Pollutant Sources: Leaks, spills, dust and grinding.

Potential Pollutants: Fuel, asphalt release agents, hydraulic fluid, oil, sediment, aggregate material and asphalt grindings. Water may be applied during grinding or post-sweeping operations. Unpermitted non-storm water discharges are prohibited.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Hazardous Waste Management, Liquid Waste Management,

Sanitary/Septic Waste Management, Safer Alternative Products, Spill Prevention and Control, and Sweeping and Vacuuming.

A2 – Asphalt Paving

Asphalt work involves the patching or resurfacing of the roadbed with a mixture of mineral aggregate and bituminous binder. The purpose is to repair degraded asphalt surfaces. The primary subtasks include equipment operation, pre- and post-sweeping, asphalt application, binder application (tack coating), pavement application and compaction roller operation. A portable toilet may be on site.

Potential Sources: Leaks, spills and stockpiled material from sweeping.

Potential Pollutants: Fuel, asphalt release agents, hydraulic fluid, oil, sediment, asphalt and petroleum-based binders. The use of water during sweeping, asphalt application, binder application, compaction roller operation and evaporative cooling must be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Hazardous Waste Management, Liquid Waste Management, Sanitary/Septic Waste Management, Material Use, Safer Alternative Products, Paving Operations Procedures, Spill Prevention and Control, Sweeping and Vacuuming and Water Conservation Practices.

A3 – Structural Pavement Failure (Digouts), Pavement Grinding and Paving

This activity applies to significant repairs to structural pavement that require removal of the roadway surface using graders and grinders. Subtasks associated with this activity include vehicle operation, asphalt removal, disposal of removed material and grindings, pre- and post-sweeping and possibly a portable toilet.

Potential Pollutant Sources: Leaks, spills, dust and grinding.

Potential Pollutants: Fuel, asphalt release agents, hydraulic fluid, oil, sediment, aggregate material and asphalt grindings. Water may be applied during grinding or post-sweeping operations; unpermitted non-storm water discharges are prohibited.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Hazardous Waste Management, Liquid Waste Management, Sanitary/Septic Waste Management, Safer Alternative Products, Spill Prevention and Control, Sweeping and Vacuuming and Water Conservation Practices.

A4 – Emergency Pothole Repairs

These are unscheduled, emergency repairs necessary for the protection of the traveling public. Pothole repairs involve the filling and resurfacing of potholes along flexible pavement portions of roadways and highways to eliminate holes and cuts in the pavement. Because of the unscheduled nature of the repairs, the applicability of BMPs is limited to planning measures that facilitate emergency response in an environmentally sound manner.

Potential Sources: Spilled patch material.

Potential Pollutants: Asphaltic concrete patch.

BMPs: Safer Alternative Products, Material Use, Vehicle and Equipment Fueling and Vehicle and Equipment Maintenance.

A5 – Sealing Operations

Seal coats may be required for asphalt pavement due to erosion or oxidation of the roadway surface. Coatings may also be used to reduce the permeability of the surface or to reduce slipperiness. Seal coats include fog seal (emulsion and water), sand seal (asphalt and sand), chip seal (emulsion and rock screenings) and slurry seal (emulsion, additives, water and aggregate). Primary subtasks include pre- and post-cleaning, seal application, sand or aggregate application and compaction roller application. Associated subtasks include equipment operation and possibly a portable toilet.

Potential Pollutant Sources: Leaks, spills, dust, material tracking and excess release agent.

Potential Pollutants: Fuel, asphalt release agents, hydraulic fluid, oil, sediment, aggregate material and asphalt emulsion. Water may be applied during post-sweeping operations; unpermitted non-storm water discharges are prohibited.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Hazardous Waste Management, Liquid Waste Management, Sanitary/Septic Waste Management, Material Use, Paving Operations Procedures, Safer Alternative Products, Spill Prevention and Control, Sweeping and Vacuuming and Water Conservation Practices.

B Family (Rigid Pavement)

The general objectives of rigid pavement maintenance activities are to provide safety, preserve the state's capital investment and maintain a riding quality that is satisfactory to the traveling public. Road surface maintenance typically involves the use of concrete and other materials to

create impervious surface areas or to repair existing road surfaces. Pollution control activities focus on ensuring that removed materials and Portland cement concrete wastes remain controlled and are not released to the environment.

B1 – Portland Cement Crack and Joint Sealing

Cracks and joints in Portland cement concrete pavement should be filled to prevent the entrance of moisture into the subgrade. A stiff broom or compressed air may be used to clean the cracks prior to sealing. Aphaltic and rubberized sealants are used to fill the cracks; then sand may be applied. Other subtasks associated with this activity include vehicle operation, post-sweeping and possibly a portable toilet.

Potential Pollutant Sources: Leaks, spills, excess emulsion and dust.

Potential Pollutants: Fuel, asphalt release agents, hydraulic fluid, oil, sediment, asphalt and rubberized sealant.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Hazardous Waste Management, Liquid Waste Management, Sanitary/Septic Waste Management, Material Use, Safer Alternative Products, Spill Prevention and Control, and Sweeping and Vacuuming.

B2 – Mudjacking and Drilling

Mudjacking is necessary for the maintenance and repair of rigid type surfacing, its associated base and any Portland concrete cement shoulders less than two feet in width. A Portland cement and pozzolan grout mixture is pumped below the slab (i.e., mudjacking) to replace lost or settled base material. Subtasks include vehicle and equipment operation, drilling, mixing and pumping and possibly the use of a portable toilet.

Potential Pollutant Sources: Leaks, spills and concrete washout.

Potential Pollutants: Fuel, hydraulic fluid, oil, sediment and concrete. Water applied during drilling and pumping operations must be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Liquid Waste Management, Sanitary/Septic Waste Management, Concrete Waste Management, Material Use, Safer Alternative Products, Spill Prevention and Control, Sweeping and Vacuuming and Water Conservation Practices.

B3 – Concrete Slab and Spall Repair

Spalling (i.e., chipping of Portland cement concrete surfaces), slab cracking and settlement are common problems associated with Portland cement concrete pavement that require repairs. Subtasks include vehicle operation, repair and cleaning (may include use of a compressor, jackhammer or sawcutting), curing and the disposal of removed materials.

Potential Pollutant Sources: Leaks, spills and concrete washout.

Potential Pollutants: Fuel, hydraulic fluid, oil, sediment and concrete. Water applied during curing operations should be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Hazardous Waste Management, Liquid Waste Management, Sanitary/Septic Waste Management, Concrete Waste Management, Material Use, Safer Alternative Products, Spill Prevention and Control, Sweeping and Vacuuming and Water Conservation Practices.

C Family (Slopes/Drainage/Vegetation)

The C Family maintenance activities include repair, replacement and clearing of channels, ditches, culverts, underdrains, horizontal drains and other elements of the storm water drainage system. Protective measures such as soil stabilization using vegetation or rock on stream banks, slopes, benches or ditches are also part of the C Family maintenance activities. Non-landscaped vegetation refers to native vegetation within the highway rights-of-way.

C1 – Shoulder Grading

Areas adjacent to surfaced and unsurfaced road shoulders require maintenance to prevent the loss of lateral support, to prevent the deterioration or failure of the road edge and to maintain roadside drainage patterns. Subtasks include equipment operation, grading, rolling, import and fill and post-sweeping.

Potential Pollutant Sources: Disturbed soil, leaks and wind erosion.

Potential Pollutants: Sediment, fuel, hydraulic fluid and oil. Water applied during sweeping operations must be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance,

Compaction, Material Use, Spill Prevention and Control, Sweeping and Vacuuming and Water Conservation Practices.

C2a – Nonlandscaped Chemical Vegetation Control

This method of vegetation control uses pesticides to eliminate and prevent the growth of undesirable vegetation. Chemical vegetation controls are used to protect preferred vegetation, to provide fire protection and to improve roadside appearance. The primary subtasks include support equipment operation, mixing and loading chemicals and chemical application.

Potential Pollutant Sources: Leaks, spills and improper application.

Potential Pollutants: Pesticides, fuel, hydraulic fluid, oil and sediment. Water used for chemical mixing or in application must be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Safer Alternative Products, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Material Use, Chemical Vegetation Control and Water Conservation Practices.

C2b – Nonlandscaped Mechanical Vegetation Control/Mowing

Mechanical vegetation control is the use of mowing to control grass and weeds to improve roadside appearance and provide fire control.

Potential Pollutant Sources: Fuel spills, fuel leaks and removed vegetation.

Potential Pollutants: Fuel, hydraulic fluid, oil and green waste.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, and Spill Prevention and Control.

C3 – Nonlandscaped Tree and Brush Pruning, Brush Clipping, Tree and Shrub Removal

Trees and shrubs are pruned to preserve their health, remove dead branches, protect utilities, maintain sight distances, preserve aesthetics and prevent property damage.

Potential Pollutant Sources: Fuel spills, fuel leaks and removed vegetation.

Potential Pollutants: Fuel, hydraulic fluid, oil, sawdust and green waste.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid

Waste Management, Sanitary/Septic Waste Management, and Spill Prevention and Control.

C5 – Drainage Ditch and Channel Maintenance

Ditches and channels are maintained to avoid obstruction and maintain flow. Subtasks include vehicle operation, mechanically cleaning, and stockpiling and disposal of removed material. Fill material may be imported to repair eroded channel walls. A portable toilet may be provided at the activity site.

Potential Pollutant Sources: Disturbed soil, leaks and stockpiles.

Potential Pollutants: Sediment, litter, fuel, hydraulic fluid and oil. Water applied during cleaning operations must be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Liquid Waste Management, Concrete Waste Management, Contaminated Soil Management, Sanitary/Septic Waste Management, Sandbag or Gravel Bag Barrier, Straw Bale Barrier, Fiber Rolls, Check Dam, Hydroseeding/Handseeding, Compaction, Clear Water Diversion, Material Use, Tire Inspection and Sediment Removal, Baseline Storm Water Drainage Facilities Inspection and Cleaning and Water Conservation Practices.

C6 – Drain and Culvert Maintenance

This activity includes the maintenance of under drains, horizontal drains, down drains, gutters, overside drains, scuppers and deck drains. Drains are maintained to prevent flooding and allow unobstructed flow. Stenciling is applied to drain inlets in accordance with the requirements of the storm drain stenciling BMP. Subtasks include vehicle operation, cleaning (backhoe or Vactor™ may be used) and stockpiling and disposal of removed material. A portable toilet may be provided at the activity site. The Department is presently evaluating the drain inlet cleaning requirements to reduce pollution. Results from the drain inlet cleaning efficacy study are anticipated by 1 September 2003.

Potential Pollutant Sources: Disturbed soil, leaks and stockpiles.

Potential Pollutants: Sediment, litter, fuel, hydraulic fluid and oil. Water applied during cleaning operations must be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Liquid Waste Management, Concrete Waste Management,

Contaminated Soil Management, Sanitary/Septic Waste Management, Sandbag or Gravel Bag Barrier, Straw Bale Barrier, Fiber Rolls, Hydroseeding/Handseeding, Compaction, Baseline Storm Water Drainage Facilities Inspection and Cleaning and Water Conservation Practices. See the Enhanced Storm Drain Inlet Inspection and Cleaning Program for areas of the state where this BMP is required.

C9 – Curb and Sidewalk Repair

This activity covers repairs made to concrete curbs and sidewalks. Subtasks include vehicle operation, repair and cleaning (may include use of a compressor, jackhammer or sawcutting), curing and the disposal of removed materials.

Potential Pollutant Sources: Leaks, spills and concrete washout.

Potential Pollutants: Fuel, hydraulic fluid, oil, sediment and concrete. Water applied during curing operations must be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Hazardous Waste Management, Liquid Waste Management, Sanitary/Septic Waste Management, Concrete Waste Management, Material Use, Safer Alternative Products, Spill Prevention and Control, Sweeping and Vacuuming and Water Conservation Practices.

D Family (Litter/Debris/Graffiti)

Traffic causes loose material on the roadbed to concentrate along curbs, dikes, gutters, paved medians, interchange ramps, bridge decks and street intersections. Roadbed and roadside cleanup operations are performed to provide safe highway conditions, protect water quality, ensure proper drainage and provide an attractive site for travelers and local communities. Litter and debris removal activities include sweeping of shoulders, paved medians, etc., and litter removal along the roadsides. Litter removal directly benefits water quality by preventing pollutants from entering a waterway.

D3 – Sweeping Operations

Sweeping operations remove litter and debris from the traveled way and shoulder to reduce traffic hazards and improve aesthetics. Subtasks associated with highway sweeping operations include operation of support vehicles, sweeper operation, stockpile management and material disposal.

Potential Pollutant Sources: Spills, leaks and stockpiles.

Potential Pollutants: Sediment, litter, fuel, hydraulic fluid and oil. Water applied during sweeping operations must be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Safer Alternative Products, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Liquid Waste Management, Sweeping and Vacuuming and Water Conservation Practices.

D4 – Litter and Debris Removal

Litter and debris are periodically collected from the Department's rights-of-way and removed from drainage grates, trash racks and ditch lines. Maintenance supervisors inspect highways in their assigned sections for the accumulation of litter. Signs may be installed where litter accumulation is a concern. The primary subtasks are support vehicle operation, manual litter collection, stockpiling and disposal. A portable toilet may be provided at the site.

Potential Pollutant Sources: Leaks or spills.

Potential Pollutants: Sediment, litter, fuel, hydraulic fluid and oil.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Anti-Litter Signs, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Sanitary/Septic Waste Management, Sweeping and Vacuuming and Litter and Debris.

D5 – Emergency Response and Cleanup Practices

Emergency response and cleanup includes the isolation, containment, identification, hazard assessment, proper removal and disposal of spilled substances on highway rights-of-way. This activity may include coordination with or notification of operators of MS4s, the RWQCB and other state agencies. Primary subtasks include equipment operation, cleanup and disposal. A portable toilet may be supplied for extensive cleanups.

Potential Pollutant Sources: Disturbed soil, leaks, material tracking and stockpiles.

Potential Pollutants: Sediment, spilled materials, fuel, hydraulic fluid and oil.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Safer Alternative Products, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Liquid Waste Management, Hazardous Waste Management, Contaminated Soil Management, Sanitary/Septic Waste Management, Material Use, Sweeping and Vacuuming and Tire Inspection and Sediment Removal.

D6 – Graffiti Removal

Graffiti is removed or painted over. The primary activities are the operation of support equipment, paint removal (may include hydroblasting, sandblasting, soda blasting or washing) and painting.

Potential Pollutant Sources: Leaks, spills and blast material.

Potential Pollutants: Sediment, grit, paint, fuel, hydraulic fluid and oil. Water applied during hydroblasting operations should be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Safer Alternative Products, Vehicle and Equipment Cleaning, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Liquid Waste Management, Material Use, Sweeping and Vacuuming and Water Conservation Practices.

E Family (Landscaping)

Landscaping activities include chemical vegetation control, mechanical weed control, tree and shrub pruning, brush chipping, tree and shrub removal, irrigation, erosion control and maintenance of vegetated surfaces. The E Family applies to landscaped vegetation planted by the Department within the highway rights-of-way.

The Department maintains as much native vegetation on roadsides as is compatible with the surrounding environment, safe highway use, aesthetics, erosion and dust control. However, some of this vegetation must be controlled to reduce the risk of roadside fires, to provide safety and to eliminate noxious weeds.

In general, vegetation management practices are designed to control vegetation while minimizing soil erosion. The Department's Vegetation Control Program is based on integrated pest management principles, including the use of physical, chemical and biological methods.

E1a – Chemical Vegetation Control

This method of vegetation control uses pesticides to eliminate and prevent the growth of undesirable vegetation. Chemical vegetation controls are used to protect preferred vegetation, to provide fire protection and to improve roadside appearance. The primary subtasks include support equipment operation, mixing and loading chemicals and chemical application.

Potential Pollutant Sources: Leaks, spills and improper application.

Potential Pollutants: Pesticides, fuel, hydraulic fluid, oil and sediment. Water used for chemical mixing or in application must be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Safer Alternative Products, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Material Use, Chemical Vegetation Control and Water Conservation Practices.

E1b –Manual Vegetation Control

Manual vegetation control is the use of handheld equipment (some equipment may be gas powered) to control grass and weeds to improve roadside appearance and provide fire control. A portable toilet may be provided.

Potential Pollutant Sources: Fuel spills, fuel leaks and removed vegetation.

Potential Pollutants: Fuel and green waste.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Sanitary/Septic Waste Management and Spill Prevention and Control.

E1c –Landscaped Mechanical Vegetation Control/Mowing

Mechanical vegetation control is the use of mowing to control grass and weeds to improve roadside appearance and provide fire control.

Potential Pollutant Sources: Fuel spills, fuel leaks and removed vegetation.

Potential Pollutants: Fuel, hydraulic fluid, oil and green waste.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management and Spill Prevention and Control.

E2b – Landscaped Tree and Shrub Pruning

Trees and shrubs are pruned to preserve their health, remove dead branches, protect utilities, maintain sight distances, preserve aesthetics and prevent property damage.

Potential Pollutant Sources: Fuel spills, fuel leaks and removed vegetation.

Potential Pollutants: Fuel, hydraulic fluid, oil, sawdust and green waste.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Sanitary/Septic Waste Management and Spill Prevention and Control.

E2c – Brush Chipping

Trees and shrubs are chipped with mechanical chippers to facilitate the removal of tree and shrub limbs from the roadside. Chipped material can be used as mulch.

Potential Pollutant Sources: Fuel spills, fuel leaks and removed vegetation.

Potential Pollutants: Fuel, hydraulic fluid, oil, sawdust and green waste.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Sanitary/Septic Waste Management and Spill Prevention and Control.

E2d – Tree and Shrub Removal

Dead or diseased trees and shrubs may be removed to protect public safety. Trees and shrubs may also be removed as part of landscaping.

Trees and shrubs are chipped with mechanical chippers to facilitate the removal of tree and shrub limbs from the roadside. Chipped material can be used as mulch.

Potential Pollutant Sources: Fuel spills, fuel leaks and removed vegetation.

Potential Pollutants: Fuel, hydraulic fluid, oil, sawdust and green waste.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Sanitary/Septic Waste Management and Spill Prevention and Control.

E3a –Irrigation Line Repairs

Irrigation line repairs include maintenance (water line flushing) and repair activities on broken water lines, sprinklers and valves. The primary subtasks are support equipment operation and the irrigation line repair (may include gluing plastic pipe or welding metal pipes).

Potential Pollutant Sources: Spills, leaks, excess sealant and welding.

Potential Pollutants: Fuel, hydraulic fluid, oil, PVC glue, primer and sediment. Section 4.7.1 of the SWMP designates discharges of water for irrigation, landscape irrigation, lawn and garden watering and planned or unplanned discharges from potable water sources as conditionally exempt.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Material Use, Sandbag and Gravel Bag Barrier, Straw Bale Barrier, Fiber Rolls, Wood Mulch, Hydroseeding/Handseeding, Hydraulic Mulch, Compaction, Spill Prevention and Control, Potable Water/Irrigation and Water Conservation Practices.

E3b – Irrigation (Watering), Potable and Nonpotable

Irrigation or watering activities are performed using potable and non-potable water.

Potential Pollutant Sources: Fuel, hydraulic fluid and oil from vehicle leaks.

Potential Pollutants: Fuel, hydraulic fluid and oil. Section 4.7.1 of the SWMP designates discharges of water for irrigation, landscape irrigation and lawn and garden watering as conditionally exempt.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Potable Water/Irrigation and Water Conservation Practices.

F Family (Environmental)

This family provides management and support of the Environmental Control Program. Activities in this family include, roadside inspection, roadside stabilization, illicit connection/illegal discharge response and storm drain stenciling.

F2 – Roadside Slope Inspection

The Department periodically inspects roadside vegetated slopes to determine the need for remedial measures. The subtask associated with this activity is confined to the operation of support vehicles and equipment to conduct inspections.

Potential Pollutant Sources: Spills and leaks from support vehicles.

Potential Pollutants: Fuel, hydraulic fluid and oil.

BMPs: IC/ID Reporting and Removal, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance and Vegetated Slope Inspection.

F4 – Roadside Stabilization

Roadside stabilization refers to the erosion control and/or soil stabilization practices on slopes within the highway right-of-way. The subtasks associated with roadside stabilization include the operation of support vehicles and equipment and slope repair. A portable toilet may be provided for extensive repair activities.

Potential Pollutant Sources: Spills, leaks and overspray onto hardscaped surfaces.

Potential Pollutants: Binders, fertilizer, fiber, seed, fuel, hydraulic fluid, oil and sewage.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Safer Alternative Products, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Sweeping and Vacuuming, Tire Inspection and Sediment Removal, Sanitary/Septic Waste Management, Silt Fence, Sandbag or Gravel Bag Barrier, Straw Bale Barrier, Fiber Rolls, Check Dam, Wood Mulch, Hydraulic Mulch, Hydroseeding/Handseeding, Straw Mulch, Compaction, Spill Prevention and Control, Material Use, Vegetated Slope Inspection and Water Conservation Practices.

F6 - Illicit Connection/Illegal Discharge Reporting

Maintenance personnel report illicit connections and illegal discharges that are discovered during the course of performing other activities. Illicit connections are connections to the Department's drainage system that have not been approved by the Department. This activity also addresses incidents of dumping, discharges and spills. Because this activity is limited to the implementation of the associated BMPs, no activity table is included in Section 2 of the Guidelines.

Potential Pollutant Sources: Unknown.

Potential Pollutants: Unknown.

BMPs: Illegal Spill Discharge Control, Illicit Connection Detection, Reporting and Removal.

F9 - Storm Drain Stenciling

Stencils are applied to facility storm drain inlets in areas with pedestrian use for communities with over 10,000 residents or in smaller communities with MS4 permits.

Potential Pollutant Sources: Spills and leaks.

Potential Pollutants: Fuel, hydraulic fluid, oil, thermoplastic resin and paint.

BMPs: Illegal Spill Discharge Control, Illicit Connection Detection, Reporting and Removal, Scheduling and Planning, Vehicle and Equipment Fueling, Vehicle and

Equipment Maintenance, Liquid Waste Management, Material Use, Safer Alternative Products, Solid Waste Management and Spill Prevention and Control.

G Family (Public Facilities)

Public facilities include safety roadside rest areas, weigh stations, park and ride lots and vista points. The degree of maintenance includes a range of custodial responsibilities that may include restrooms, fountains, picnic areas~~,~~ and other public facilities. Maintenance of appurtenances such as roadway surfacing, signs, pavement markings, buildings, landscaping and electrical installations are also considered under this category.

Potential Pollutant Sources: Trash, litter, sewage, chemical vegetation control, erosion, illegal dumping, graffiti, spills and leaks.

Potential Pollutants: Litter, sewage, pesticides, sediment, sandblast grit, paint, fuel, hydraulic fluid and oil. Section 4.7.1 of the SWMP designates discharges of water for irrigation, landscape irrigation and lawn and garden watering as conditionally exempt.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Safer Alternative Products, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Liquid Waste Management, Sanitary/Septic Waste Management, Concrete Waste Management, Spill Prevention and Control, Material Use, Material Delivery and Storage, Maintenance Facility Housekeeping Practices, Litter and Debris, Sweeping and Vacuuming, Anti-Litter Signs, Potable Water/Irrigation and Water Conservation Practices.

H Family (Bridges)

Bridge maintenance activities include work such as repairing damage or deterioration in various bridge components; removing debris from piers, bearing seats and abutments; repairing expansion joints; cleaning and painting structural steel; and sealing concrete surfaces. Also included are the maintenance of electrical and mechanical equipment on moveable-span bridges and the operation of the moveable spans.

H2 – Welding and Grinding

Welding and grinding is performed on structures, including bridges, roads and individual service facilities. Subtasks include the operation of support vehicles, grinding and welding.

Potential Pollutant Sources: Grinding, welding rods, spills and leaks.

Potential Pollutants: Removed paint, grit, solder, eroded sediment, fuel, hydraulic fluid and oil. Water applied during hydroblasting operations must be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Safer Alternative Products, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Hazardous Waste Management and Material Use.

H7a - Sand Blasting, Wet Blast with Sand Injection and Hydroblasting

This activity removes graffiti and cleans concrete walls and structural steel. Subtasks include the operation of support vehicles and equipment and the blasting operations. Portable toilets may be supplied for extensive projects.

Potential Pollutant Sources: Grit, removed paint, spills and leaks.

Potential Pollutants: Removed paint, grit, sewage, fuel, hydraulic fluid and oil.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Safer Alternative Products, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Liquid Waste Management, Hazardous Waste Management, Sanitary/Septic Waste Management, Material Use, Spill Prevention and Control, Sandbag or Gravel Bag Barrier, Straw Bale Barrier, Fiber Rolls, Sweeping and Vacuuming and Water Conservation Practices.

H7b – Painting

Painting operations apply paint to bridge surfaces. Routine maintenance of painting equipment is also included in this activity. Subtasks include the operation of support vehicles and equipment and painting.

Potential Pollutant Sources: Overspray, spills and leaks.

Potential Pollutants: Paint, sewage, fuel, hydraulic fluid and oil.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Safer Alternative Products, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Liquid Waste Management, Hazardous Waste Management, Sanitary/Septic Waste Management, Material Use and Spill Prevention and Control.

H9a – Bridge Repairs

Bridge maintenance activities include repairing bent or damaged steel beams, cracked or spalled concrete, damaged expansion joints and bent or damaged railings. Subtasks associated with this activity include the operation of support vehicles and equipment, pavement repair and welding and grinding operations.

Potential Pollutant Sources: See Structural Pavement Failure (Digouts) Pavement Grinding and Paving and Concrete Slab and Spall Repairs.

Potential Pollutants: See Structural Pavement Failure (Digouts) Pavement Grinding and Paving and Concrete Slab and Spall Repairs.

BMPs: See Structural Pavement Failure (Digouts) Pavement Grinding and Paving and Concrete Slab and Spall Repairs.

H9b – Draw Bridge Maintenance

Draw bridge maintenance activities include maintaining mechanical and electrical equipment, removing debris and drift and removing debris from sumps. Subtasks include operation of support vehicles and equipment and maintenance of the rotating and lifting span operations.

Potential Pollutant Sources: Spills and leaks.

Potential Pollutants: Lubricants, sewage, fuel, hydraulic fluid and oil.

BMPs: Scheduling and Planning, Illegal Spill Discharge Control, Safer Alternative Products, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Sanitary/Septic Waste Management, Liquid Waste Management, Spill Prevention and Control and Material Use.

J Family (Other Structures)

The J Family of activities includes maintenance and repair of pumping plants. Pollution control activities focus on ensuring that debris, wastewater and excess maintenance and repair materials remain controlled and are not released to the environment.

J1 – Pump Station Cleaning

Pump stations are maintained to dewater depressed sections of the highway where storm water routinely collects. Solids that collect in sumps must be removed and the pumps maintained for proper operation. Subtasks associated with this activity include operation of support vehicles and equipment, pump maintenance and disposal operations.

Potential Pollutant Sources: Stockpiled material, spills and leaks.

Potential Pollutants: Litter and debris, sediment, fuel, hydraulic fluid and oil.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Liquid Waste Management, Contaminated Soil Management, Spill

Prevention and Control, Maintenance Facility Housekeeping, Sweeping and Vacuuming, Tire Inspections and Sediment Removal and Water Conservation Practices.

J2 – Tube and Tunnel Maintenance and Repair

This activity includes the maintenance of tunnels and tubes (traffic under a water body). Tunnels and tubes are maintained by removing dirt and debris from the tunnel and repairing the pavement and walls. Subtasks include the operation of support vehicles and equipment, pavement repair, wall repair and hauling and disposal operations.

Potential Pollutant Sources: Stockpiled material, spills and leaks (see Structural Pavement Failure [Digouts] and Concrete Slab and Spall Repairs).

Potential Pollutants: Litter and debris, sediment, fuel, hydraulic fluid and oil. Water applied during tunnel cleaning operations must be controlled to prevent unpermitted non-storm water discharges (see Structural Pavement Failure [digouts] and Concrete Scale and Spill Repairs).

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Safer Alternative Products, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Liquid Waste Management, Concrete Waste Management, Spill Prevention and Control, Material Use and Water Conservation Practices.

K Family (Electrical)

The K Family of activities includes all work performed on highway facilities used for control of traffic (e.g., traffic signal systems, highway and sign lighting systems, toll bridge electrical systems and other related systems). Pollution control activities focus on ensuring that debris and maintenance and repair materials remain controlled and are not released to the environment.

K6 – Sawcutting for Loop Installation

Detector loops are electrical sensors used to trigger a traffic control signal at an intersection and/or for long-term traffic counts. Installation of detector loops is accomplished by cutting into the road surface with a concrete saw, inserting electric wire into the cut and sealing the cut with loop sealant. Subtasks include support vehicle operation, sawcutting, hauling and disposal and pavement repair.

Potential Pollutant Sources: Leaks, spills, sawcuttings and sealants.

Potential Pollutants: Concrete, sealant, fuel, hydraulic fluid and oil. Water applied during sawcutting operations must be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Concrete Waste Management, Liquid Waste Management, Material Use, Water Conservation Practices and Sweeping and Vacuuming.

M Family (Traffic Guidance)

The M Family of activities covers all work to replace and maintain roadway delineation and pavement markings. Typical work includes refurbishing, delineation and replacement of missing markers. Pollution control activities ensure that paints, debris and excess maintenance and repair materials remain controlled and are not released to the environment.

M1 and M2 – Thermoplastic Striping and Marking

Thermoplastic materials are used for lane stripes and other pavement markings to guide motorists. Thermoplastic material is heated in a preheater and then applied to the pavement by thermoplastic stripers or applicators. Subtasks include vehicle and equipment operation and striping.

Potential Pollutant Sources: Spills and leaks.

Potential Pollutants: Thermoplastic resin, fuel, hydraulic fluid and oil.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Safer Alternative Products, Spill Prevention and Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Hazardous Waste Management, Sweeping and Vacuuming and Material Use.

M1 and M2 – Paint Striping and Marking

Pavement striping is used for lane stripes and other pavement markings to guide motorists. Surfaces may be swept prior to painting. Water-based paints are applied using striper paint systems. Other pavement markings may be applied using striper paint systems or stencils.

Potential Pollutant Sources: Overspray, dust, spills and leaks.

Potential Pollutants: Paint, sediment, fuel, hydraulic fluid and oil. Water used during pre-sweeping operations must be controlled to prevent unpermitted non-storm water discharges.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Spill Prevention and Control, Safer Alternative Products, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management,

Liquid Waste Management, Material Use, Sweeping and Vacuuming and Water Conservation Practices.

M3 – Raised/Recessed Pavement Marker Application and Removal

Pavement markers supplement traffic signs. Markers may either be surface mounted (raised) or placed in recessed slots in the pavement. Markers are applied using bitumen/epoxy adhesives. Damaged markers are removed using hand tools or graders and loaders.

Potential Pollutant Sources: Excess application, spills and leaks.

Potential Pollutants: Epoxy, fuel, hydraulic fluid and oil.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Spill Prevention and Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management and Material Use.

M4 – Sign Repair and Maintenance

Sign installation includes mounting one- or two-post roadside signs as well as multipanel signs on overhead sign structures. Damaged or obsolete signs are replaced or removed. Subtasks include support equipment operation, posthole drilling and hauling and disposal activities.

Potential Pollutant Sources: Spills and leaks.

Potential Pollutants: Sediment, debris, fuel, hydraulic fluid and oil.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Material Use and Compaction.

M7 – Median Barrier and Guard Rail Repair

Median barriers and guard rails are routinely maintained. More extensive repairs may be required following an accident. Subtasks include support vehicle operation, guard rail truck operation and material hauling and disposal activities.

Potential Pollutant Sources: Removed material, spills and leaks.

Potential Pollutants: Debris, fuel, hydraulic fluid and oil.

BMPs: IC/ID Reporting, Scheduling and Planning, Illegal Spill Discharge Control, Compaction, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance,

Solid Waste Management, Concrete Waste Management, Sweeping and Vacuuming, Water Conservation Practices and Tire Inspection and Sediment Removal.

M8 – Emergency Vehicle Energy Attenuator Repair

Vehicle energy attenuators or impact energy attenuators are canisters with a crushable design that may be filled with water or sand. Periodic maintenance is needed to ensure the containers are properly filled and in the correct position. Subtasks include support equipment operation, attenuator repair and hauling and disposal activities.

Potential Pollutant Sources: Damaged attenuators, spills and leaks.

Potential Pollutants: Sand, debris, fuel, hydraulic fluid and oil. Section 4.7.1 of the SWMP designates planned or unplanned discharges from potable water sources as conditionally exempt (e.g., during filling of the canisters).

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Spill Prevention and Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Solid Waste Management, Sweeping and Vacuuming and Water Conservation Practices.

R Family (Snow and Ice Control)

Snow removal and ice control activities include snow removal operations, hauling of snow to storage areas and opening of drainage inlets that are covered or blocked by snow and ice. Because salt, de-icing chemicals and abrasives may pollute storm water runoff, the Department uses no more than the minimum amount of these materials necessary for snow and ice control.

R1 – Snow Removal

Snow removal includes snow removal, drift prevention, the installation and maintenance of snow fences and the installation and removal of snow poles. Drains covered by snow may be opened and roads may be plowed.

Potential Pollutant Sources: Spills and leaks.

Potential Pollutants: Sediment, fuel, hydraulic fluid and oil.

BMPs: Scheduling and Planning, Illegal Spill Discharge Control, Safer Alternative Products, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance and Snow Removal and De-Icing Agents.

R2 – Ice Control

Ice control involves the use of de-icing agents and abrasives to maintain public safety. Subtasks include vehicle and equipment operation and application.

Potential Pollutant Sources: Deicing agents, abrasives, spills and leaks.

Potential Pollutants: Salt, sand, cinders, fuel, hydraulic fluid and oil.

BMPs: IC/ID Reporting and Removal, Scheduling and Planning, Illegal Spill Discharge Control, Safer Alternative Products, Spill Prevention and Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Spill Prevention and Control, Sweeping and Vacuuming, Material Use, Snow Removal and De-Icing Agents.

S Family (Storm Maintenance)

The S Family activities provide temporary road openings and related maintenance to keep damaged facilities operational following major damage caused by storms, earthquakes, slides, flooding and other major disasters. Environmental concerns include placement of slide materials to protect waterways within the overall priority of maintaining public safety.

S3 – Minor Slides and Slipouts Cleanup/Repair

Repair of minor slides and slipouts includes cleaning up or backfilling minor slides and minor damage to the roadside. Soil, rocks and boulders deposited on the roadway are removed and minor erosion damage can be repaired. Downed or damaged vegetation may also be removed.

Potential Pollutant Sources: Spills, leaks and slide material.

Potential Pollutants: Slide material, debris, fuel, hydraulic fluid and oil.

BMPs: IC/ID Reporting and Removal, Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Sweeping and Vacuuming, Tire Inspection and Sediment Removal, Silt Fence, Sandbag and Gravel Bag Barrier, Straw Bale Barrier, Fiber Rolls, Compaction, Check Dam, Overside/Slope Drains, Storm Water Dewatering Operation, Ditches, Berms, Dikes and Swales, Working in a Water Body, Temporary Diversion Ditches, Vegetated Slope Inspection, Solid Waste Management, Compaction, Hydraulic Mulch, Hydroseeding/Handseeding and Wood Mulch.

T Family (Management and Support)

The T Family includes the following activities:

- Storage, repair and maintenance of vehicles, equipment and related support materials;
- Fueling and washing of vehicles and equipment;
- Maintenance of buildings, storm water drainage systems and landscaping;
- Storage of sand, salt, asphalt, rock, pesticides;
- Storage of wastes generated on site; and
- Bulk storage of sediment, litter and debris generated by road maintenance activities.

The Department currently implements practices to reduce the potential for storm water pollution by minimizing contact between storm water and the various substances used at the maintenance facilities. BMPs for the T Family also focus on proper handling of materials and wastes.

T5b – Building and Grounds Maintenance

Permanent maintenance facilities need building and grounds maintenance. Building and grounds maintenance includes care of landscaped areas around each facility, cleaning of parking areas and pavements other than areas of industrial activity, and maintenance of the storm water drainage system. Subtasks include equipment operation, litter/trash pickup and maintenance of restrooms/RV dump stations and landscaping.

Potential Pollutant Sources: Spills, leaks, trash, sewage, erosion and chemical vegetation control.

Potential Pollutants: Litter, trash, sewage, pesticides, fuel, hydraulic fluid and oil. Section 4.7.1 of the SWMP designates discharges of water for irrigation, landscape irrigation, lawn and garden watering and planned or unplanned discharges from potable water sources as conditionally exempt.

BMPs: Scheduling and Planning, Illegal Spill Discharge Control, Safer Alternative Products, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Sweeping and Vacuuming, Silt Fence, Sandbag and Gravel Bag Barrier, Straw Bale Barrier, Fiber Rolls, Wood Mulch, Compaction, Spill Prevention and Control, Solid Waste Management, Liquid Waste Management, Sanitary/Septic Waste Management, Hazardous Waste Management, Concrete Waste Management, Material Delivery and Storage, Material Use, Litter and Debris, Potable Water/Irrigation, Water Conservation Practices, Maintenance Facility Housekeeping Practices and Compaction.

T7a – Storage of Hazardous Materials (Working Stock)

Maintenance facilities store a variety of products that may be harmful to the environment if they come into contact with surface waters. Materials that may be stored include pesticides, petroleum products, paints, cement and solvents. The primary subtask is vehicle and equipment operation.

Potential Pollutant Sources: Spills and leaks.

Potential Pollutants: Pesticides, paint, solvents, asphaltic products, cement, epoxy resins, fuel, hydraulic fluid and oil.

BMPs: Scheduling and Planning, Illegal Spill Discharge Control, Safer Alternative Products, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Material Delivery and Storage and Spill Prevention and Control.

T7c – Material Storage Control (Hazardous Waste)

Maintenance facilities store a variety of wastes that may adversely impact water quality if they come into contact with surface waters.

Potential Pollutant Sources: Spills and leaks.

Potential Pollutants: Used oil, paint, solvents, diesel, lead-acid batteries, fuel, hydraulic fluid and oil.

BMPs: Scheduling and Planning, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Hazardous Waste Management, Material Delivery and Storage and Spill Prevention and Control.

T7d – Outdoor Storage of Raw Materials

Maintenance facilities (and activities based out of maintenance facilities) store a variety of products that may be harmful to the environment if they come into contact with storm water runoff.

Potential Pollutant Sources: Spills and leaks.

Potential Pollutants: Sand, de-icing agents, wet-weather asphaltic materials, fuel, hydraulic fluid and oil.

BMPs: Illegal Spill Discharge Control, Scheduling and Planning, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Material Delivery and Storage, Spill Prevention and Control, Maintenance Facility Housekeeping Practices and Safer Alternative Production.

T9a – Vehicle and Equipment Fueling

When vehicle and equipment fueling takes place at a maintenance facility, there is the potential for fuel to be leaked or spilled at the site. The procedures for vehicle and equipment fueling are designed to minimize contact between storm water runoff and spilled fuel, oil or other leaked vehicle fluids at equipment fueling areas.

Potential Pollutant Sources: Spills and leaks.

Potential Pollutants: Fuel, hydraulic fluid and oil.

BMPs: Illegal Spill Discharge Control, Vehicle and Equipment Fueling, Material Delivery and Storage and Spill Prevention and Control.

T9b – Vehicle and Equipment Cleaning

When vehicle and equipment washing is conducted at a maintenance facility, it is essential that the wash water is not discharged to the drainage system. Alternative disposal methods include recycling or discharge to a sanitary sewer system. Proper vehicle and equipment washing minimizes contact between storm water runoff and the equipment washing area and ensures that the wash water is not discharged to drainage systems or watercourses. Washing is to occur in designated areas where runoff will be contained.

Potential Pollutant Sources: Spills and leaks.

Potential Pollutants: Sediment, cleaning agents, fuel, hydraulic fluid and oil. Water used for cleaning must be controlled to prevent unpermitted non-storm water discharges.

BMPs: Illegal Spill Discharge Control, Material Use and Water Conservation Practices.

T9c – Vehicle and Equipment Maintenance and Repair

Vehicle and equipment maintenance and repairs may include vehicle fluid removal, engine and parts cleaning, body repair and painting.

Potential Pollutant Sources: Spills and leaks.

Potential Pollutants: Used oil, lead-acid batteries, spent antifreeze, used oil filters, paint fuel, hydraulic fluid, and oil.

BMPs: Illegal Spill Discharge Control, Safer Alternative Products, Vehicle and Equipment Maintenance, Spill Prevention and Control, Solid Waste Management, Liquid Waste Management, Hazardous Waste Management and Maintenance Facility Housekeeping Practices.

T9d – Aboveground and Underground Tank Leak and Spill Control

Maintenance facilities may utilize aboveground storage tanks for storage of bulk quantities of liquids. Often the liquids stored are potentially harmful to the environment.

Potential Pollutant Sources: Spills and leaks.

Potential Pollutants: Fuel, oil and emulsions.

BMPs: Scheduling and Planning, Illegal Spill Discharge Control, Material Delivery and Storage, Spill Prevention and Control, Hazardous Waste Management, Liquid Waste Management and Maintenance Facility Housekeeping Practices.

Design Standards for Fueling Facilities

The Department requires Portland Cement concrete paving for new or substantially remodeled fuel dispensing areas. Any underground storage tanks are equipped with spill containment and overflow prevention systems.

B.2.3 Further Research Needed: Category IA

The Department recognizes the need for additional research. The details of the research program are discussed in Section 7 of the Statewide SWMP. Research in the following area is presently under way:

- Alternative Highway Drainage due to the SWRCB by January 1, 2003 (results from the drain inlet cleaning efficacy study are scheduled for 1 September 2003).
- Vehicle Use Minimization

The following areas are being studied and the final reports will be submitted to the SWRCB:

- Alternative street sweeping procedures;
- Alternative litter pickup;
- Drain inlet cleaning; and
- Soil stabilization maintenance.

B.3 BMP CATEGORY IB: DESIGN POLLUTION PREVENTION BMPS

B.3.1 Overview

Permanent pollution prevention controls are physical controls intended to prevent pollutants from becoming entrained in storm water runoff after construction is complete. This section lists and

describes those BMPs that are considered during the planning and design phases of projects (see Section B.6 for a tabular summary of all BMPs). Detailed descriptions, appropriate application, and implementation of these BMPs are discussed in the Guidelines.

TABLE B-2: DESIGN POLLUTION PREVENTION BMPs

Consideration of Downstream Effects Related to Potentially Increased Flow
Preservation of Existing Vegetation
Concentrated Flow Conveyance Systems
Ditches, Berms, Dikes and Swales
Overside Drains
Flared Culvert End Sections
Outlet Protection/Velocity Dissipation Devices
Slope/Surface Protection Systems
Vegetated Surfaces
Hard Surfaces

B.3.2 Approved BMPs: Category IB

Consideration of Downstream Effects Related to Potentially Increased Flow

The Department's design goal is to minimize impervious surfaces and prevent downstream erosion. The Department will consider a range of controls, including other BMPs in this section, to prevent increased runoff from causing downstream erosion.

Preservation of Existing Vegetation

Preservation of existing vegetation is the identification and protection of desirable grasses, plants and trees to retain their erosion and sediment control benefits. The Department will preserve existing vegetation at areas on a site where no construction activity is planned or construction will occur at a later date.

Concentrated Flow Conveyance Systems

Concentrated flow conveyance systems consist of permanent design measures that are used alone or in combination to intercept and divert surface flows, and convey and discharge concentrated flows with a minimum of soil erosion, both on-site and downstream. These include:

- Ditches, berms, dikes and swales;
- Overside drains;
- Flared culvert end sections; and
- Outlet protection/velocity dissipation devices.

Slope/Surface Protection Systems

Surface protection consists of a system of permanent design measures that are used alone or in combination to minimize erosion from completed, disturbed surfaces. Vegetated surfaces may offer several advantages to paved surfaces, including lower runoff volumes and slower runoff velocities, increased times of concentration, and lower cost. However, where site- or slope-specific conditions would prevent adequate establishment and maintenance of a vegetative cover, hard surfacing should be considered.

Vegetated Surfaces - A vegetated surface is the establishment of a permanent perennial vegetative cover on areas that have been disturbed by construction.

Hard Surfaces - Hard surfaces consist of concrete, rock, or rock and mortar placed to effect slope protection. Where hard surfaces are used, downstream impacts from increased impervious surfaces will be adequately addressed.

B.3.3 Further Research Needed: Category IB

The Department is investigating alternative highway and storm drainage design standards for new, major reconstruction and retrofit projects that would improve implementation of maintenance BMPs. The SWMP discussions on alternative highway design standards are now consolidated in Section 4.3.2. The Department will report the findings from its investigation by April 1, 2003.

B.3.4 Rejected BMPs: Category IB

[No BMPs in this category at present.]

B.4 BMP CATEGORY II: CONSTRUCTION SITE BMPs

B.4.1 Overview

These BMPs are BCT/BAT-based temporary control practices (BMPs) that are consistent with the BMPs and control practices required under the State of California NPDES General Permit for Storm Water Discharges Associated with Construction Activities (General Permit) (see Section B.6 for a tabular summary of all BMPs).

To ensure the RWQCB staff has adequate opportunity to comment and review a proposed construction site SWPPP, the RE will notify and invite the RWQCB staff to attend all preconstruction and planning meetings held to discuss construction activities and the development of a site's SWPPP. Failure of the RWQCB to attend a meeting or respond to an invitation will not result in the delay of construction activities.

Table B-3 lists the construction site BMPs and their potential applications. The appropriate application and implementation of these BMPs is discussed in the Guidelines. Tables 4-3 and 4-4

of the Guidelines establish Department recommended effective combination of erosion and sediment control measures.

TABLE B-3: CONSTRUCTION SITE STORM WATER POLLUTION PREVENTION BMPs AND APPLICATIONS

	Construction Site BMPs (Category II)					
	Soil Stabilization Practices	Sediment Control Practices	Wind Erosion Control	Tracking Control Practices	Non-Storm Water Control	Waste Management and Materials Pollution Control
Best Management Practices						
Temporary Sediment Control						
Silt Fence		X				
Sandbag Barrier		X				
Straw Bale Barrier		X				
Fiber Rolls		X				
Gravel Bag Berm		X				
Check Dam		X				
Desilting Basin		X				
Sediment Trap		X				
Sediment Basin		X				
Temporary Soil Stabilization						
Hydraulic Mulch	X		X			
Hydroseeding	X		X			
Soil Binders	X		X			
Straw Mulch	X		X			
Geotextiles, Mats/Plastic Covers and Erosion Control Blankets	X		X			
Scheduling	X	X	X	X	X	X
Preservation of Existing Vegetation	X		X			
Temporary Concentrated Flow Conveyance Controls						
Earth Dikes/Drainage Swales & Lined Ditches	X					
Outlet Protection/Velocity Dissipation Devices	X					
Slope Drains	X					
Temporary Stream Crossing	X					
Clear Water Diversion	X				X	
Wind Erosion Control			X			
Sediment Tracking Control						
Street Sweeping and Vacuuming				X		
Stabilized Construction Roadway	X		X	X		
Entrance/Outlet Tire Wash				X		
Waste Management						
Spill Prevention and Control						X
Solid Waste Management						X
Hazardous Waste Management						X

TABLE B-3: CONSTRUCTION SITE STORM WATER POLLUTION PREVENTION BMPs AND APPLICATIONS

	Construction Site BMPs (Category II)					
	Soil Stabilization Practices	**Sediment Control Practices**	**Wind Erosion Control**	**Tracking Control Practices**	**Non-Storm Water Control**	**Waste Management and Materials Pollution Control**
Contaminated Soil Management						X
Concrete Waste Management						X
Sanitary/Septic Waste Management						X
Liquid Waste Management						X
Materials Handling						
Material Delivery and Storage						X
Material Use						X
Vehicle and Equipment Operations						
Vehicle and Equipment Cleaning						X
Vehicle and Equipment Fueling						X
Vehicle and Equipment Maintenance						X
Paving Operations						X
Stockpile Management						X
Water Conservation Practices					X	
Potable Water/Irrigation					X	
Dewatering Operations					X	X
Illicit Connection/Illegal Discharge Detection and Reporting					X	
Storm Drain Inlet Protection*		X				
Stabilized Construction Entrance / Exit*				X		

* See Section B.4.3

B.4.2 Approved BMPs: Category II

Temporary Sediment Control

Silt Fence - A silt fence is a temporary barrier of permeable fabric designed to intercept and slow the flow of sediment-laden sheet flow runoff from exposed, erodible soil. Silt fences allow sediment to settle from runoff before water leaves the construction site.

Sandbag Barrier - A sandbag barrier is a temporary sediment barrier consisting of stacked sandbags designed to intercept and slow the flow of sediment-laden sheet flow runoff. Sandbag barriers allow sediment to settle from runoff before water leaves the construction site.

Straw Bale Barrier - A straw bale barrier is a temporary sediment barrier consisting of straw bales designed to intercept and slow the flow of sediment-laden sheet flow runoff. Straw bale barriers allow sediment to settle from runoff before water leaves the construction site.

Fiber Rolls - A fiber roll consists of materials rolled or bound into a roll and placed on a slope to intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide some removal of sediment from the runoff.

Gravel Bag Berm - A gravel bag consists of gravel bags that are installed end-to-end to form a barrier across a slope to intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide some removal of sediment from the runoff.

Check Dam - A check dam is a small device constructed of rock or sandbags placed across a natural or man-made channel or drainage ditch. Erosion of the drainage ditch is reduced by restricting the velocity of flow in the ditch.

Desilting Basin - Sediment-laden runoff is directed to a designed temporary basin that allows sediment to settle out before the runoff is discharged. A desilting basin is generally less extensive than a Sediment Basin (see below). Desilting basins may be considered for use on construction projects during the rainy season where runoff may enter storm drain systems or watercourses.

The design of the desilting basin was established by the Department's Engineers to address space limitations associated with linear construction sites that cannot accommodate the size of sediment basin designed in accordance with specifications of the General Permit. The SWRCB and RWQCB have agreed with the use of desilting basins only when used in conjunction with other appropriate sediment and erosion control measures. To address the SWRCB and RWQCB's concerns with the use of these basins, the Department will not use desilting basins as stand-alone systems and will only allow the basin to receive runoff from disturbed areas of the site. Non-storm water discharges and runoff from undisturbed areas will not be routed to the basin to avoid compromising the basin's design capacity and treatment efficiency.

Section 4.5.1 of the Guidelines presents design standards for desilting basins. Section 4.5.1 includes a description of desilting basins and identifies appropriate applications, design standards, implementation procedures, and maintenance procedures.

The design standards for desilting basins as proposed in the August 2000 Guidelines did not adequately address inlet/outlet design and configuration requirements to ensure optimum treatment, avoid short circuiting, avoid standing water, and avoid flooding. **Within 90 days** of approval of the May 2001 SWMP, Caltrans revised the minimum design standards for the desilting basins to address these issues subject to the review and approval of the Executive Officer of the SWRCB.

Sediment Trap - A sediment trap is a small temporary containment area with a controlled release structure formed by excavating or constructing an earthen embankment across a ditch or low drainage area.

Sediment Basin - A sediment basin is a temporary designed basin sized in accordance with specifications of the General Permit. Sediment basins are designed with controlled release structures and are constructed by excavating or constructing an earthen embankment across a ditch or low drainage area. The General Permit establishes minimum design criteria for these basins, and the Department will use these criteria at construction sites where sediment basins are the only control measures proposed for the site.

Temporary Soil Stabilization

Hydraulic Mulch - Hydraulic mulching is an erosion control measure that consists of applying a mixture of shredded wood fiber and tackifier with hydromulching equipment.

Hydroseeding - Hydroseeding consists of applying a mixture of wood fiber, seed, fertilizer and stabilizing emulsion with hydro-mulch equipment. It is typically applied to disturbed areas requiring temporary protection against erosion. Hydroseeding may be used alone only when there is sufficient time in the season to ensure adequate vegetation establishment and coverage to provide adequate erosion control. Otherwise hydroseeding must be used in conjunction with mulching.

Soil Binders - Soil binding consists of applying and maintaining polymeric or lignin sulfonate soil stabilizers. Soil binders typically are applied to disturbed areas requiring temporary protection from erosion.

Straw Mulch - Using straw mulch for soil stabilization consists of placing a uniform layer of straw and incorporating it into the soil with a studded roller or anchoring it with a stabilizing emulsion. This is an effective temporary erosion control measure and can be used in conjunction with hydroseeding.

Geotextiles, Mats/Plastic Covers and Erosion Control Blankets - These soil stabilizers involve applying nonvegetative materials to exposed soil surfaces to prevent the movement of dust generated by wind, traffic and/or grading activities. Soil stabilization can reduce or eliminate the amount of soil particles discharged to the storm drain system or watercourses.

Scheduling - A schedule for every project considers sequencing of construction activities with the installation of control measures. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain, run-on, runoff and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

Preservation of Existing Vegetation - Preservation of existing vegetation is the identification and protection of desirable vegetation that provides erosion and sediment control benefits.

Temporary Concentrated Flow Conveyance Controls

Earth Dikes/Drainage Swales & Lined Ditches - These are structures that intercept, divert, and convey surface runoff, generally sheet flow, to prevent erosion.

Outlet Protection/Velocity Dissipation Devices - These devices are placed at pipe outlets to prevent scour and reduce the velocity and/or energy of exiting storm water flows.

Slope Drains - A slope drain is a pipe used to intercept and direct surface runoff or groundwater into a stabilized watercourse, trapping device or stabilized area. Slope drains are usually lined ditches used to intercept and direct surface flow away from slope areas to protect cut or fill slopes.

Temporary Stream Crossing - A temporary stream crossing is a structure placed across a waterway that allows vehicles to cross the waterway during construction without entering the water, eliminating erosion and downstream sedimentation caused by the vehicles.

Clear Water Diversion - Clear water diversion consists of a system of structures and measures that intercepts clear surface water runoff upstream of a project site, transports it around the site and discharges it downstream with minimal water quality degradation from either the project construction operations or from the construction of the diversion. Structures commonly used as part of this system include diversion ditches, berms, dikes, slope drains, and drainage and interceptor swales.

Wind Erosion Control - Wind erosion control consists of applying water or other dust palliatives or covering of material as necessary to prevent or alleviate dust nuisances.

Sediment Tracking Control

Street Sweeping and Vacuuming - Practices to remove tracked sediment to prevent the sediment from entering a storm drain or watercourse.

Stabilized Construction Roadway - A stabilized construction roadway is a temporary access road connecting existing public roads to a remote construction area. It is designed for the control of dust and erosion created by vehicular tracking.

Entrance/Outlet Tire Wash - A tire wash is an area located at stabilized construction roadway egress points to remove sediment from tires and under carriage, and to reduce or prevent sediment from being transported onto public roadways.

Waste Management

Spill Prevention and Control - These are procedures and practices used to prevent and control spills in a manner that minimizes or prevents the discharge of spilled material to the storm drain system or watercourses.

Solid Waste Management - These are procedures and practices used to reduce or eliminate the discharge of pollutants to storm drain systems or to watercourses as a result of the creation, stockpiling and removal of construction site wastes.

Hazardous Waste Management - These are procedures and practices used to reduce or eliminate the discharge of pollutants from construction site hazardous waste to storm drain systems or to watercourses.

Contaminated Soil Management - These are procedures and practices to minimize or eliminate the discharges of pollutants to storm drain systems or to watercourses from contaminated soil.

Concrete Waste Management - These are procedures and practices used to minimize or eliminate the discharge of concrete waste materials to storm drain systems or to watercourses.

Sanitary/Septic Waste Management - These are procedures and practices used to minimize or eliminate the discharge of construction site sanitary/septic waste materials to storm drain systems or to watercourses.

Liquid Waste Management - Procedures and practices used to prevent the discharge of pollutants to storm drain systems or to watercourses as a result of the creation, collection, and disposal of nonhazardous liquids.

Materials Handling

Material Delivery and Storage - These are procedures and practices for the proper handling and storage of materials in a manner that minimizes or eliminates the discharge of pollutants to storm drain systems or to watercourses.

Material Use - These are procedures and practices for the use of construction material in a manner that minimizes the discharge of pollutants to storm drain systems or to watercourses.

Vehicle and Equipment Operations

Vehicle and Equipment Cleaning - These are procedures and practices used to reduce or eliminate the discharge of pollutants from vehicle and equipment cleaning operations to storm drain systems or to watercourses.

Vehicle and Equipment Fueling - These are procedures and practices used to minimize or eliminate the discharge of fuel spills and leaks into storm drain systems or to watercourses.

Vehicle and Equipment Maintenance - These are procedures and practices used to minimize or eliminate the discharge of pollutants from vehicle and equipment maintenance procedures to storm drain systems or to watercourses.

Paving Operations - These are procedures that reduce pollution of storm water runoff during paving operations.

Stockpile Management - Procedures and practices to reduce or eliminate pollution of storm water from stockpiles of soil and paving material.

Water Conservation Practices - Water conservation practices are activities that use water during the construction of a project in a manner that avoids causing erosion and/or the transport of pollutants off-site.

Potable Water/Irrigation - Irrigation water, landscape irrigation, lawn or garden watering, planned and unplanned discharges from potable water sources and water line and hydrant flushing are conditionally exempt non-storm water discharges. When these discharges enter a construction site they cannot be exposed to materials that would introduce pollutants into the runoff.

Dewatering Operations - These are practices that reduce or prevent the discharge of pollutants to receiving waters from dewatering operations.

Illicit Connection/Illegal Discharge Detection and Reporting - Procedures and practices for construction contractors to recognize illicit connections or illegally dumped or discharged materials on a construction site and to report incidents to the Resident Engineer.

B.4.3 Further Research Needed: Category II

These are temporary construction BMPs that have been identified as needing further research and evaluation to verify their design and effectiveness. Although these BMPs have not yet been approved, they are available for use on an innovative basis on construction projects as determined by the Resident Engineer and when no other viable approved BMP is available to the Resident Engineer. The Resident Engineer will monitor such use as part of the BMP assessment process and report to the District Construction Storm Water Coordinator.

Storm Drain Inlet Protection - These temporary devices are used to detain and/or filter sediment-laden runoff to allow sediment to settle prior to discharge into storm drain systems or watercourses.

Stabilized Construction Entrance/Exit - These facilities are used to remove soil from truck tires and are located at the ingress and egress areas of the construction site. Options include the installation of a driveway with large aggregate and fixed ribs on a steel plate;

these features are intended to dislodge soils from truck tires before the truck enters public highways.

Level Spreader - These devices are commonly used to disperse the energy of concentrated flows, reduce erosion potential and encourage sedimentation. They are typically used to convert concentrated runoff to sheet flow to distribute the flow over vegetated areas. Adherence to design, installation, and maintenance criteria is essential to avoid failure due to erosion or settlement. An October 2001 study concluded that level spreaders are not an appropriate temporary construction site BMP. Further studies may be undertaken to evaluate level spreaders as a permanent BMP. This will be contingent upon funding availability and whether information indicates that level spreaders may be effective as a permanent BMP under slope and land configuration conditions typically found on the Department's right-of-way.

B.4.4 Rejected BMPs: Category II

Brush and Rock Filters - Brush and rock filters are the use of brush bundles or a row of rocks as temporary sediment controls. The other temporary sediment controls identified are considered more effective and more cost-effective than brush or rock filters.

Mulching - Mulching consists of applying a mixture of shredded wood mulch or compost and applying a stabilizing emulsion. This BMP has been rejected because other soil stabilization BMPs (hydraulic mulch, and straw mulch) demonstrate greater pollution control and are more technically feasible.

Level Spreaders as a Temporary Construction Site BMP - As discussed in Section 4.51 and B.4.3, it has been determined, based on an effectiveness evaluation, that level spreaders are not an appropriate BMP for temporary construction sites.

B.5 BMP CATEGORY III: TREATMENT BMPs

This section discusses treatment BMPs (Category III). Implementation of these BMPs is described in Section 4 (see Section B.6 for a tabular summary of all BMPs).

The selection process and conditions of deployment of these BMPs are discussed in the Guidelines.

B.5.1 Technically Feasible BMPs: Category III

Based on the Department's experience in implementing BMP pilot programs to date, the following treatment BMPs are technically feasible. Technically feasible BMPs are devices found by the Department to be constructible and maintainable, and effective at removing pollutants based on site selection and design criteria for a particular BMP.

Biofiltration Strips and Swales

Biofiltration strips and swales are designated treatment zones that receive storm water discharges from the highway or other impervious surfaces. Biofiltration swales are vegetated channels that convey storm water. Biofiltration strips, also known as vegetated buffer strips, are vegetated sections of land over which storm water flows as overland sheet flow.

Pollutants are removed by filtration through the vegetation, sedimentation, adsorption to soil particles, and infiltration through the soil. Strips and swales will be considered whenever site conditions and climate allow vegetation to be established and where flow velocities are not high enough to cause scour. Even where strips cannot be sited to accept directed sheet flow, vegetated areas provide treatment of rainfall and reduce the overall impervious surface.

The Department shall also preserve existing vegetation and incorporate additional vegetation as a Design Pollution Prevention BMP where practicable.

Infiltration Basins

These devices store runoff and allow it to infiltrate into the ground. Infiltration effectively prevents pollutants in the captured runoff from reaching surface waters. In areas of high sediment loads, pretreatment may be required. Infiltration basins may be rejected as a viable BMP if groundwater quality is a site condition concern or if infiltration is prohibited by the RWQCB or local agency.

Infiltration Trenches

Infiltration trenches function in a similar manner to infiltration basins. The trenches are often elongated, allowing them to be used in constricted areas. Because trenches are backfilled with rock, pretreatment by a detention device and sand filter is required to reduce maintenance to an acceptable level. Infiltration trenches may be rejected as a viable BMP if groundwater quality is a site condition concern or if the RWQCB or local agency prohibits infiltration.

Sand Filters

Sand filters are vaults or tanks with a layer of sand through which storm water flows by gravity. Filters are preceded by detention devices that provide pretreatment and protect the filters.

Detention Devices

Detention devices are basins or tanks that temporarily detain runoff under quiescent conditions to allow particles to settle out.

Traction Sand Traps

Traction sand traps temporarily detain runoff and allow traction sand, which was previously applied to snowy or icy roads, to settle out.

Dry-Weather Flow Diversion

In some cases, low, dry weather flows in urban areas can be diverted from the storm drain system to the sanitary sewer system and conveyed to a publicly owned treatment works (POTW). During wet weather, the diversion is suspended because wet weather flow volumes are greater than can be normally managed at POTWs.

B.5.2 Fiscal Feasibility

The approved BMPs have been found to be technically and economically feasible for statewide consideration. Treatment BMPs will be considered for all new construction and major reconstruction projects. Runoff from storm drain systems and facilities owned or operated by the Department have a cumulative impact on waters of the State. Runoff may adversely impact receiving waters and their beneficial uses through both acute effects of contaminant concentrations and the chronic influences of loadings. These impacts will be addressed and mitigated incrementally project by project to meet the Permit discharge requirement of reducing the discharge of pollutants to the MEP from storm drain systems owned and operated by the Department. The cost to implement approved treatment BMPs will be considered as part of the cost to build and maintain State highways. The Department is required by law to implement appropriate controls to reduce pollutants discharged from storm water drainage systems it owns or operates and to protect water quality to the MEP. The Department is also required by law to consider placing treatment BMPs into the design and operations of State highways and road to the MEP. As such, the Department will address the storm water quality program in a similar manner as it addresses and incorporates all other legally required highway safety and design standards into its projects and operations.

B.5.3 Design Sizing Criteria for Approved Treatment BMPs

Most treatment BMPs are designed based on flow rates or volume of runoff. Unlike flood control measures that are typically designed to store or convey the peak volumes or flows from infrequent storm events, treatment BMPs are designed to treat the lower volume or flow of the more frequent storm events. The design basis associated with frequent events is commonly referred to as the water quality volume (WQV) for BMPs designed based on volume, and is referred to as the water quality flow (WQF) for BMPs that are designed based on flow. In general, a treatment BMP is to be sized to accommodate the WQV or WQF from its contributing drainage area and flow in excess of these values is diverted around or through the treatment BMP.

The Department worked with the SWRCB and RWQCBs to develop appropriate methodologies to determine the WQV. The WQV is based on one of three methodologies (see also Section 5 of the Water Quality Guidelines).

The WQV will be determined based on the following:

1. The RWQCB or local agency sizing criteria, whichever is more stringent, if developed, or
2. Where the RWQCB or local agency does not have an established sizing criteria, the Department will use one of the following methods that have been found acceptable to the SWRCB and RWQCBs:
   - The 85th percentile 24-hour runoff event determined as the maximized capture of storm water volume for the area using the sizing methods provided in Chapter 5 of the *Urban Runoff Quality Management WEF Manual of Practice No. 23*, 1998, published jointly by the Water Environment Federation and the American Society of Civil Engineers,
   - The volume of annual runoff based on unit basin storage WQV to achieve 80 percent or more volume of treatment based on the sizing methods provided in the California Storm Water Municipal Best Management Practice Handbooks, March 1993, published by the California Storm Water Quality Task Force, or
3. A volume established by the Department subject to the review and approval of the RWQCB when:
   - The site area is limited and cannot accommodate the size of a treatment BMP using the sizing methods established in Options 1 or 2 above, or
   - A sizing treatment BMP using the methods established in Options 1 or 2 above in areas of the State with significant annual precipitation that could result in excessively large treatment units.

The Department worked with the SWRCB and RWQCBs to establish minimum WQF design criteria. A definition of WQF is given and numerical values added for each RWQCB region.

The WQF is the primary design criteria to be used for filtering types of treatment control devices. As identified in the approved SWMP (Section B.5.3), the Department, the SWRCB and the nine RWQCBs worked cooperatively to establish the values.

The listed values of rainfall intensity would be used in the Rational Formula (Q=CiA) to generate runoff from areas, which would flow to the filtering treatment device. The resulting runoff rate would be the design WQF to be used at any specific site.

The WQF should be used as the basis for developing current designs, but over time, both the Department and the Boards should review and assess the effectiveness of this criteria for possible

revision. Also, where there are special circumstances or conditions, the project-specific designer and the affected RWQCB should discuss the potential need for modification of the criteria on a case-by-case basis.

1. Region 1 (North Coast) – 0.22 inches/hour ("/hr) for Siskiyou and Modoc Counties, 0.27 "/hr for Trinity and Mendocino Counties and 0.36 "/hr for Del Norte, Humboldt and Sonoma Counties.
2. Region 2 (San Francisco) – 0.20 "/hr regionwide.
3. Region 3 (Central Coast) – 0.22 "/hr for Santa Cruz County, 0.20 "/hr for Santa Clara County, 0.18 "/hr for San Benito, Monterey and San Luis Obispo Counties and 0.26 "/hr for Santa Barbara County.
4. Region 4 (Los Angeles) – 0.20 "/hr regionwide.
5. Region 5 (Central Valley) – 0.16 "/hr for portions of Lassen and Modoc Counties within the Region, all areas of Region below 1,000' elevation north of and including Sacramento and Amador Counties and below 2,000' elevation south of Sacramento and Amador Counties, and all elevations on the west side of the Region (rain shadow side of the Coast Range). 0.20 "/hr for elevations in the Sierra Nevadas between 1,000' and 4,000' in the north and between 2,000' and 4,000' in the south. 0.24 "/hr for all elevations above 4,000' in the Sierra Nevadas.
6. Region 6 (Lahontan) –
   a) Where there are location-specific requirements (Truckee River, East and West Forks Carson River, Mammoth Creek, and Lake Tahoe), the WQF will conform to the Basin Plan requirement for runoff from impervious areas. Where runoff from pervious areas contributes to the flow to the treatment device, the WQF value to be used will be as specified in the following two items.
   b) Other than as stated in item a), above, the WQF to be used for that portion of the Lahontan Region including Inyo County and areas southward will be 0.16 "/hr. The WQF to be used for pervious surface areas within the Mammoth Creek watershed above 7,000 feet will be 0.16 "/hr.
   c) For all other areas of the Lahontan Region other than as indicated in item a) above, the WQF to be used will be 0.20 "/hr. This includes pervious surface areas of the Truckee River, Carson River East and West Forks and Lake Tahoe Hydrologic units.
7. Region 7 (Colorado River) – 0.16 "/hr regionwide.
8. Region 8 (Santa Ana River) – 0.20 "/hr regionwide.
9. Region 9 (San Diego) – 0.20 "/hr regionwide.

To maximize vegetation and use of vegetated treatment BMPs (see Sections 4.3.1 and 4.4.4), the Department currently does not use the WQV or WQF as a design parameter for strips and swales.

For safety, swales are designed to convey flows from larger storm events, and consequently, will also provide treatment for more frequent storm events. To maximize vegetated cover, strips are employed whenever site conditions and climate allow vegetation to be established and where sheet flow conditions exist. Biofiltration strips should be designed as long (in the direction of flow) and flat as possible. The design engineers shall consult other functional units to ensure that safety and vegetation sustainability and maintenance issues are addressed. The Department shall provide opportunities for comment from RWQCB staff in accordance with Sections 4.3.1 and 4.4.

To determine if standard open channel design requirements for vegetated strips and swales provide adequate treatment, the Department is undertaking a water quality monitoring study. The study will evaluate the removal of storm water constituents by existing vegetated slopes adjacent to freeways. Proposed amended siting and design criteria will be provided for review to the SWRCB by August 15, 2003. The Department shall allow 60 days for SWRCB comment to the proposed amended siting and design criteria.

B.5.4 Approved Treatment BMPs

The approved BMPs identified below are considered to be technically and fiscally feasible for consideration in projects statewide. Where there is, or is proposed to be, a storm drain system with a drainage pipe or collection ditch discharging directly or indirectly into a receiving water or a downstream storm drain system owned by others, these treatment BMPs will be considered and, where found feasible based on site, design, maintenance, and operation criteria, will be installed:

- Biofiltration strips and swales;
- Infiltration basins;
- Detention devices;
- Gross solids removal devices;
- Traction sand traps; and
- Dry weather flow diversion.

B.5.5 Further Research Needed: Category III

The following treatment methods are being tested.

Infiltration Trenches

Infiltration trenches function in a similar manner to infiltration basins. The trenches are often elongated, allowing them to be used in constricted areas. Because trenches are backfilled with rock, pretreatment by a detention device and sand filter is required to reduce maintenance to an

acceptable level. Infiltration BMPs are commonly used and have been found to be technically feasible. They are currently being studied for operation and maintenance activity considerations.

Sand Filters

Sand filters are vaults or tanks with a layer of sand through which storm water flows by gravity. Filters are preceded by detention devices that provide pretreatment and protect the filters. Sand filters are technically feasible (Section B.5.1), but are not seen to be fiscally feasible (Section B.5.2). Further research is needed in the following areas: (a) the feasibility of designing, constructing, and maintaining lower-cost sand filters that use alternative basin designs such as earthen basins with sand filter bottoms; and (b) the definition of appropriate receiving water "hot spots" in whose catchments deployment of sand filters, with their pollutant removal characteristics, may be an appropriate BMP.

Swirl-Type Litter Screening Devices

These devices induce a swirling motion in the water. This motion, when combined with screens, removes litter and debris. Preliminary results are that the standing pool of water they maintain is an attractant for mosquito breeding. Placement of weep holes in the sump may solve this problem. The technical feasibility concern is that the units may have a high potential for clogging and bypass that would require an impractical level of maintenance. Since the unit would be initially drained, clogging could result when water slowly rises without sufficient swirling action during the first part of a storm and debris such as pine needles could clog the screen. Clogging could also result from the small screen sizes. The manufacturer has discontinued the 1.2 mm mesh screen for storm water applications because of clogging problems. The current test will use 2.4 mm mesh screens. Larger mesh screens require field tests in the Department's applications to determine if the clogging problem has been addressed. Testing of CDS units is underway. These treatment units are commonly used in Australia and are now being installed in many different areas of California and the country. The Department will incorporate the field experience and knowledge of others that use these devices in its studies to determine the technical and economic feasibility of these units.

Drain Inlet Inserts

The Department is testing two types of drain inlet inserts at maintenance facilities. The technical feasibility issue with these devices is their ability to fulfill their hydraulic functions without excessive maintenance. The treatment effectiveness of the drain inlet inserts is also in question.

Media Filtration (Media Other Than Sand)

Media filters remove fine sediment, particulate-associated pollutants, and possibly dissolved pollutants. The normal configuration consists of an initial sedimentation basin or vault followed by a filtering vault. Media currently being researched include pearlite/zeolite and a peat/sand mixture. The technical feasibility concern is that they cost more than sand filters; however, the

hope is that they provide compensating advantages in terms of higher levels of treatment or less restrictive siting requirements.

Canister Filters

Canister filters hold their filtering media in manufactured containers (canisters) rather than open beds or vaults. The canister filter currently being tested uses pearlite/zeolite media. Unlike the approved sand filter, it does not have a large sedimentation basin preceding the filter unit. The technical feasibility concern is that canister filters are more expensive than sand filters and may not provide higher levels of treatment. The maintainability of the canister filters without prior detention devices is also a concern.

Multi-Chambered Treatment Trains (MCTTs)

The MCTT uses three treatment mechanisms in three different chambers. It includes a grit chamber, sedimentation chamber with tube settlers and sorbent pads, and a filter chamber containing a mixture of sand and peat sandwiched between filter fabric layers. The technical feasibility concerns with MCTTs are that they are more expensive than sand filters; however, the hope is that they provide compensating advantages in terms of higher levels of treatment or less restrictive siting requirements. Other technical issues of concern are the maintenance requirements, and vector monitoring and abatement needs of these devices.

Oil/Water Separators

An oil/water separator is designed to remove free oil and grease from storm water runoff by allowing oil droplets to collide and coalesce to become larger globules that are captured in the separator. The separator consists of three compartments: a forebay, an oil separation cell, and an afterbay. The technical feasibility issue with these devices concerns their applicability to the Department's facilities. Oil/water separators are typically used in applications where the influent pollutant concentrations are significantly higher than those found in the Department's storm water runoff.

Constructed Treatment Wetlands

Constructed wetlands are permanent pools of water designed to mimic naturally occurring wetlands. They can be shallow vegetated areas or include deeper pools with vegetation at the fringe. The main distinction between construction and natural wetlands is that constructed wetlands are placed in upland areas and as such are not subject to wetland protection regulations. This distinction allows them to receive storm water discharges and to be used for treatment. They only remain non-jurisdictional if routine maintenance is performed on an on-going basis. The main operation and maintenance concern is that constructed wetlands have the potential to attract and harbor sensitive or endangered species, which may prevent the maintenance activities needed for continued water quality functions and vector control. This would then preclude their use as a treatment device. Physical deterrents for the establishment of sensitive or endangered

animal species (such as netting and noise generation) have been considered and determined to be infeasible. The Department currently operates one constructed wetland pilot. Because of the potential for endangered/sensitive species establishment, establishment, the Department is required to be in continual contact with the appropriate state and federal regulatory agencies.

According to the literature, constructed wetlands achieve high levels of solids removal and moderate removal of nutrients and metals. Data from five storms at the La Costa pilot wet basin show that solids and metals were removed very effectively, but nutrients were not. This may be due to a large nursery that discharges into the drainage system upstream of the wet basin that services at the nutrient rich dry weather water source for the pond. Moreover, measuring concentrations during storm events does not indicate what is happening during dry weather discharges from the wet basin. A concern is that nutrients removed from storm water in the winter may be discharged during the summer in the form of algae. The Department has initiated dry weather influent and effluent monitoring to evaluate the impact upstream discharges may have on the influent quality and to address the algae question.

The Department is working cooperatively with the SWRCB and RWQCBs to select sites to install and monitor additional constructed wetlands as possible future treatment BMPs to be considered in projects. The study of additional constructed wetlands will begin by the wet season 2003.

Polymer-Assisted Flocculation

Polymer-assisted flocculation is an emerging, effective technology employed to remove fine silts and clays from construction site runoff and dewatering discharges that is currently being used in the Pacific Northwest. Use of this type of BMP may be appropriate in certain areas and watersheds of California. The Department researched this technology and submitted a technical report on its findings and recommendations to the SWRCB.

B.5.6 Rejected BMPs: Categories III

Inlet Structure Catch Basin

Catch basins include sumps that extend below the outlet drain pipes. The findings of the *Catch Basin Assessment for Pollution Removal* (September 26, 1996) indicated that catch basins are not effective at removing pollutants and most of the solids found on road surfaces. Vectors associated with standing water (i.e., mosquitoes) create a public health issue. Standing water can also create an odor nuisance. Maintenance personnel risks are also unwarranted based on benefits. The cost of installing and maintaining catch basins is high.

B.6 TABULAR SUMMARY OF BMP CLASSIFICATION

A tabular summary of the results of the BMP identification, evaluation and approval process is shown in Table B-4.

TABLE B-4: CLASSIFICATION OF BMPs

Evaluation / Approval Groupings (Classifications)	IA Maintenance BMPs	IB Design Pollution Prevention BMPs	II Construction Site BMPs	III Treatment BMPs
Approved	**Scheduling and Planning** **Sediment Control** Silt Fence Sandbag or Gravel Bag Barrier Straw Bale Barrier Fiber Rolls Check Dam **Concentrated Flow Conveyance Controls** Overside/Slope Drains Ditches, Berms, Dikes and Swales Temporary Diversion Ditches ***Soil Stabilization*** Wood Mulch Hydraulic Mulch Hydroseeding/Handseeding Straw Mulch Compaction ***Clear Water Diversion*** ***Work in a Water Body*** ***Sediment Tracking Control*** Tire Inspection and Sediment Removal ***Waste Management*** Spill Prevention and Control Solid Waste Management Hazardous Waste Management Contaminated Soil Management Sanitary/Septic Waste Management Liquid Waste Management Concrete Waste Management ***Materials Handling*** Material Delivery and Storage	***Consideration of Downstream Effects Related to Potentially Increased Flow*** ***Preservation of Existing Vegetation*** ***Concentrated Flow Conveyance Systems*** Ditches, Berms, Dikes and Swales Overside Drains Flared Culvert End Sections Outlet Protection/Velocity Dissipation Devices ***Slope/Surface Protection Systems*** Vegetated Surfaces Hard Surfaces	***Temporary Sediment Control*** Silt Fence Sandbag Barrier Straw Bale Barrier Fiber Rolls Gravel Bag Berm Check Dam Desilting Basin Sediment Trap Sediment Basin ***Temporary Soil Stabilization*** Hydraulic Mulch Hydroseeding Soil Binders Straw Mulch Geotextiles, Mats/Plastic Covers and Erosion Control Blankets ***Scheduling*** ***Preservation of Existing Vegetation*** ***Temporary Concentrated Flow Conveyance Controls*** Earth Dikes/Drainage Swales & Lined Ditches Outlet Protection/Velocity Dissipation Devices Slope Drains ***Temporary Stream Crossing*** ***Clear Water Diversion*** ***Wind Erosion Control*** ***Sediment Tracking Control*** Street Sweeping and Vacuuming Stabilized Construction Roadway Entrance/Outlet Tire Wash	***Biofiltration Strips and Swales*** ***Infiltration Basins*** ***Detention Devices*** ***Traction Sand Traps*** ***Dry-Weather Flow Diversion***

TABLE B-4: CLASSIFICATION OF BMPs

Evaluation / Approval Groupings (Classifications)	IA Maintenance BMPs	IB Design Pollution Prevention BMPs	II Construction Site BMPs	III Treatment BMPs
Approved (continued)	Material Use ***Vehicle and Equipment Operations*** Vehicle and Equipment Fueling Vehicle and Equipment Maintenance ***Paving Operations Procedures*** ***Water Conservation Practices*** ***Potable Water/Irrigation*** Safer Alternative Products ***Drainage Facilities*** Baseline Storm Water Drainage Facilities Inspection and Cleaning Enhanced Storm Drain Inlet Inspection and Cleaning Program Illicit Connection Detection, Reporting and Removal Illegal Spill Discharge Control **Litter and Debris Removal** Litter and Debris Anti-Litter Signs ***Chemical Vegetation Control*** **Vegetated Slope Inspection** ***Snow Removal and De-Icing Agents*** ***Storm Water Dewatering Operations*** ***Sweeping and Vacuuming*** ***Maintenance Facility Housekeeping Practices*** **Fuel Dispensing Areas at New or Substantially Remodeled Facilities**		***Waste Management*** Spill Prevention and Control Solid Waste Management Hazardous Waste Management Contaminated Soil Management Concrete Waste Management Sanitary/Septic Waste Management Liquid Waste Management ***Materials Handling*** Material Deliver y, and Storage Material Use ***Vehicle and Equipment Operations*** Vehicle and Equipment Cleaning Vehicle and Equipment Fueling Vehicle and Equipment Maintenance ***Paving Operations*** ***Stockpile Management*** ***Water Conservation Practices*** ***Potable Water/Irrigation*** ***Dewatering Operations*** ***Illicit Connection/Illegal Discharge Detection and Reporting***	

TABLE B-4: CLASSIFICATION OF BMPs

Evaluation / Approval Groupings (Classifications)	IA Maintenance BMPs	IB Design Pollution Prevention BMPs	II Construction Site BMPs	III Treatment BMPs
Further Research Needed	Alternative Street Sweeping Procedures/ Alternative Litter Pickup Drain Inlet Cleaning Soil Stabilization Maintenance Vehicle Use Minimization	Alternative Highways and Storm Drainage Design Standards	Storm Drain Inlet Protection Stabilized Construction Entrance/Exit Level Spreader	Infiltration Trenches Sand Filters Swirl-Type Litter Screening Devices Drain Inlet Inserts Media Filtration (media other than sand) Canister Filters Multi-Chambered Treatment Trains (MC TTs) Oil/Water Separators Constructed Treatment Wetlands Polymer-Assisted Flocculation
Rejected			Brush or Rock Filters Mulching	Inlet Structure Catch Basin

C.1 ABBREVIATIONS

ft	feet
gal	gallon
gpm	gallons per minute
ha	hectares
in	inches
L	liter
m	meters
mm	millimeters
s	second

C.2 ACRONYMS

ACCRP	Annual Construction Compliance Review Plan
AGC	Association of General Contractors
AMCRP	Annual Maintenance Compliance Review Plan
ADT	Average Daily Traffic
BAT	Best Available Technology Economically Achievable
BCT	Best Conventional Pollutant Control Technology
BMP	Best Management Practice
Cal/EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAMMPR	California Management Measures for Polluted Runoff
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CIP	Capital Improvement Program
CTC	California Transportation Commission
CTR	California Toxics Rule
CWA	Clean Water Act
CZARA	Coastal Zone Act Reauthorization Amendments

DOT	Department of Transportation
DSA	Disturbed Soil Area
DTSC	Department of Toxic Substances Control
EPA	United States Environmental Protection Agency
FPPP	Facility Pollution Prevention Plan
FY	Fiscal Year
HAZMAT	Hazardous Materials
HU	Hydrologic Unit
IC/ID	Illicit Connection/Illegal Discharge
IWMB	Integrated Waste Management Board
LMPS	Litter Management Pilot Study
MCTT	Multi-Chambered Treatment Trains
MEP	Maximum Extent Practicable
MISST	Maintenance Inspection and Slope Stabilization Team
MS4	Municipal Separate Storm Sewer System
NOAA	National Organization of Atmospheric Administration
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
OES	Office of Emergency Services
PE	Project Engineer
POTW	Publicly Owned Treatment Works
PS&E	Plans, Specifications & Estimates
PY	Person-Year
RE	Resident Engineer
RWQCB	California Regional Water Quality Control Board
STIP	State Transportation Improvement Plan
SWAT	Storm Water Advisory Team
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan

SWQTF	Storm Water Quality Task Force
SWRCB	California State Water Resources Control Board
TMDL	Total Maximum Daily Load
WDR	Waste Discharge Requirements
WLA	Waste Load Allocation
WPCP	Water Pollution Control Program
WQO	Water Quality Objective
WQV	Watery Quantity Volume

C.3 DEFINITION OF TERMS

Active Construction Area:

An area defined by the contractor where the contractor intends to be actively working in the ensuing 21-day period. This may include areas that have not already been cleared and grubbed as well as areas that have already been cleared and grubbed.

Annual Construction Compliance Review Plan (ACCRP):

Plan describing compliance evaluation criteria, protocols, and reporting methods for the upcoming year's construction compliance monitoring program.

Annual Maintenance Compliance Review Plan (AMCRP):

Plan describing compliance evaluation criteria, protocols, and reporting methods for the upcoming year's maintenance compliance monitoring program.

Average Daily Traffic (ADT):

Average count of vehicles passing a given point or using a specified roadway.

Annual Report:

An annual progress report submitted by Caltrans to the SWRCB each year. The Permit requires the Annual Report to provide an evaluation of progress made by Caltrans to implement the Statewide SWMP, as well as an assessment of the effectiveness of the SWMP and its BMPs.

Basin Plan:

A water quality control plan developed by an RWQCB for a specific geographic area. The Basin Plan identifies beneficial uses of waters, the water quality objectives needed to maintain these beneficial uses, and an implementation plan. A copy of the Basin Plan for a specific region can be acquired from the appropriate Regional Water Quality Control Board or can be reviewed online at http:// www.swrcb.ca.gov/plnspols/index.html.

Beneficial Uses:

The resources, services, and qualities of state waters that may be protected against quality degradation. The uses include, but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves. The specific uses such as "cold freshwater habitat" and "water contact recreation" are defined in Section 2 of the RWQCB Basin Plans. Beneficial Uses are defined in California Water Code Section 13050(f).

Best Available Technology Economically Achievable (BAT):

Best Available Technology (BAT) is a term derived from Section 301(b) of the federal CWA and refers to BMPs to reduce toxic and non-conventional pollutants in discharges from construction sites. Toxic pollutants are those defined in Section 307(a)(l) of the CWA and include heavy metals and man-made organics. Non-conventional pollutants are those not covered by conventional and toxic pollutants, such as ammonia, chloride, toxicity and nitrogen.

Best Conventional Pollutant Control Technology (BCT):

Best Conventional Technology (BCT) is a term derived from Section 301(b) of the federal CWA and refers to BMPs to reduce conventional pollutants in discharges from construction sites. Conventional pollutants include biochemical oxygen demand, total suspended solids, oil and grease, fecal coliforms and pH.

California Code of Regulations (CCR):

The regulations that implement California laws. Posted at http://www.calregs.com/.

California Department of Transportation (Caltrans):

The state government agency responsible for construction, maintenance and operation of state and federal highways in California.

California Environmental Protection Agency (Cal/EPA):

The agency that incorporates the SWRCB, the IWMB, the Air Resources Board, and other agencies with environmental responsibilities.

California Transportation Commission (CTC):

The appointed commission that sets overall transportation policy for the State of California.

Catch Basin:

A storm drain inlet having a sump below the outlet to capture settled solids.

Code of Federal Regulations (CFR):

Document that codifies all rules of the executive departments and agencies of the federal government. It is divided into fifty volumes, known as titles. Title 40 of the CFR (referenced as 40 CFR) lists all environmental regulations. 40 CFR is available from bookstores operated by the Government Printing Office and online at: http://www.epa.gov/epahome/cfr40.htm

Construction Contractor:

Party responsible for carrying out the contract per plans and specifications. The Plans, Standard Specifications and Special Provisions contain storm water protection requirements that the contractor must address.

Construction Site:

The area involved in a construction project as a whole.

Contamination:

An impairment of the quality of waters of the state by waste to a degree that creates a hazard to the public health through poisoning or through the spread of disease, including any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.

Conventional Pollutants:

Those pollutants defined in the federal regulations at 40 CFR 401.16 (pursuant to Section 304(a)(4) of the CWA). These pollutants include biochemical oxygen demand (BOD), total suspended solids (TSS) (nonfilterable), pH, fecal coliform, and oil and grease.

Co-permittee:

A permittee to an NPDES permit that is only responsible for permit conditions relating to the discharges from its area of jurisdiction.

Department of Toxic Substances Control (DTSC):

The agency within Cal/EPA that has responsibility for regulating the generation, management and disposal of hazardous wastes.

Detention Device:

Facilities designed to collect and temporarily detain the initial volume of storm water runoff for a specified period of time, to permit settlement of particulate pollutants.

Dewatering Operations:

The removal of groundwater resulting from excavation activities.

Disturbed Soil Area (DSA):

Areas of exposed, erodible soil, including stockpiles, that are within the construction limits and that result from construction activities.

Drainage Area:

That portion of the earth's surface from which precipitation or other runoff flows to a given location. With respect to a highway, this location may be either a culvert, the farthest point of a channel, or an inlet to a roadway drainage system.

Drainage Report:

A report prepared during project design (prior to the start of construction) for reference in showing drainage patterns.

Drainage Swale:

A storm drainage conveyance structure designed to intercept, divert and convey surface runoff, generally sheet flow, to prevent erosion and reduce pollutant loading.

Dredge:

To clean, deepen or widen by removal of sand or mud, especially from the bottom of a body of water.

Encroachment:

Occupancy of project right-of-way by nonproject structures or objects of any kind or character; also, activities of other parties within the operating right-of-way.

Environmental Protection Agency (EPA):

The federal agency with primary responsibility for implementation of federal environmental statutes, including the CWA, Clean Air Act, Safe Drinking Water Act and Resource Conservation and Recovery Act. California is included within EPA Region IX, headquartered in San Francisco.

Erosion:

The wearing away of land surface, primarily by wind or water. Erosion occurs naturally as a result of weather or runoff, but can be intensified by clearing, grading or excavation of the land surface.

Erosion Control:

The stabilization of cut and fill slopes and other areas within a highway right-of-way.

Evaluation:

Refers to the analysis and interpretation of information obtained through monitoring.

Exempt (from NPDES Permit) Construction Activities:

Routine maintenance to maintain original line and grade, hydraulic capacity or original purpose of a facility; emergency construction activities required to protect public health and safety; projects such as rehabilitation of highway planting and irrigation.

Existing Vegetation:

Any vegetated area that has not already been cleared and grubbed.

Facility Pollution Prevention Plan (FPPP):

A plan that identifies the functional activities specific to the maintenance facility and the applicable BMPs and other procedures utilized by maintenance personnel to reduce the discharge of pollutants in storm water.

Fair Weather Prediction:

When there is no anticipated precipitation in the forecast for the 24 hours immediately after the close-of-business of a working day (72 hours on Fridays). The forecast should

be that of the National Weather Service (NOAA weather radio) or some other agreed upon source of forecasting information.

Fire Protection Strips:

Buffer strips adjacent to the right-of-way where vegetation is controlled to reduce the risk of fire.

Good Housekeeping:

A common practice related to the storage, use or cleanup of materials performed in a manner that minimizes the discharge of pollutants.

Groundwater:

The term usually refers to the "saturated" zone in the ground where all the pore space between the soil particles is occupied by water.

Grubbed:

Vegetation has been removed by mechanical or manual methods.

Hazardous Waste:

A waste or combination of wastes that, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either cause or significantly contribute to an increase in mortality or an increase in serious irreversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed. Possesses at least one of four characteristics (ignitability, corrosivity, reactivity or toxicity) or appears on special EPA or state lists. Regulated under the federal Resource Conservation and Recovery Act and the California Health and Safety Code.

Herbicides:

Chemical compounds that are used to control weeds.

Hydraulics:

The study and technological application of the behavior of fluids.

Hydrologic Unit:

A subunit of a basin as defined by a RWQCB.

Illicit Connections:

Connections to the Department's storm sewer systems made by others without permission.

Illegal Discharge:

Any nonpermitted discharge to a receiving water.

Infiltration Device:

An infiltration basin designed to capture runoff volume from the water quality design storm and infiltrate it to the soil.

Integrated Waste Management Board (IWMB):

The state agency within Cal/EPA responsible for solid waste management (non-hazardous).

Irrigated:

Artificially supplied with water through ditches or pipes.

Maintenance Activities:

Routine maintenance activities that may require clearing, grading or excavation to maintain original line and grade, hydraulic capacity or original purpose of the facility.

Maintenance Facilities:

Facilities under the Department's ownership or control that contain such areas as fueling areas, waste storage or disposal facilities, wash racks, equipment or vehicle storage and materials storage areas.

Median Area:

The portion of a divided highway separating the traveled ways for traffic in opposite directions. Often contains storm drain system facilities, such as ditches and swales.

Monitoring:

Refers to a variety of activities and processes through which the Department will obtain information relevant to its implementation of the storm water quality management program so that the need for and/or opportunities for revising or refining its program can be identified.

Municipal Separate Storm Sewer System (MS4)

Storm drain systems regulated by the federal Phase I and Phase II storm water regulations. Municipal combined sewer systems are regulated separately. MS4s are defined in the federal regulations at 40 CFR 122.26(b)(8). The preamble to the Phase I regulations discusses submitting MS4 storm water permit applications to DOTs in some circumstances.

Navigable Waters:

The waters of the United States that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; interstate waters; and intrastate lakes, rivers, streams, mudflats, sandflats and wetlands.

Nonactive Construction Area:

An area defined as part of the construction site but not identified by the contractor as being "active" during the rainy season.

Nonpoint Source Discharge:

Discharge from a diffuse pollution source (i.e., without a single point of origin or not introduced into a receiving stream from a specific outlet).

Non-Storm Water Discharge:

Any discharge to a storm drain system or receiving water that is not composed entirely of storm water.

Notice of Completion:

A formal notification submitted by the Department to the appropriate RWQCB upon completion of the construction and stabilization of a site.

Notice of Construction:

A formal notification submitted by the Department to the appropriate RWQCB at least 30 days prior to the start of a construction project that will result in the disturbance of two hectares (five acres) of soil. Information on the tentative start date, tentative duration, location of construction, description of project, estimated number of affected acres and the name and phone number of the RE is provided.

Nutrients:

Any substance assimilated by living things that promotes growth. The term is generally applied to nitrogen and phosphorus in wastewater, but is also applied to other essential and trace elements.

Office of Emergency Services (OES):

California Agency in the Governor's Office with responsibility for coordinating responses to emergencies. OES receives initial Hazmat spill reports and sends them on to other involved agencies such as RWQCBs and Department of Fish & Game. (*Note*: the federal National Response Center must be contacted separately.) OES internet page at http://www.oes.ca.gov/.

Oil Waste:

Oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse and oil mixed with wastes other than dredged soil.

Outfall:

The point source where a municipal storm sewer discharges to waters of the United States.

Peak Flow:

The highest amount of stream or river flow occurring in a year or from a single storm event.

Permanent BMPs:

BMPs that are installed during construction and designed to provide long-term storm water quality protection following a project's completion.

Permanent Soil Stabilization:

Soil stabilization controls that provide storm water quality management after construction is completed.

Permit:

Refers to the NPDES Storm Water Permit (Order No. 99-06-DWQ) adopted by the SWRCB on July 15, 1999.

Person Year (PY):

The equivalent of a full-time person working year round; a method of measuring labor.

Pesticide:

Any material used to control pests. Includes insecticides, herbicides and rodenticides.

Plans, Specifications and Estimates (PS&E):

The bid documents, including general design, specifications and estimated costs. These also include Water Pollution Control Special Provisions.

Point Source:

Any discernible, confined and discrete conveyance or collection system by which pollutants are or may be discharged.

Mass Loading:

The quantity of a constituent found in runoff expressed in mass per unit of time. Mass loadings are commonly expressed in units of tons/year or pounds/year.

Project Delivery:

The Department's program that is responsible for the planning, design and construction of projects; includes associated functional units.

Project Engineer (P.E.):

The P.E. responsible for the preparation of Project Study Reports and Project Reports during the project planning phase. The P.E. is also responsible for PS&E documents (see above) during the design phase. The storm water responsibilities are described in Section 4 (Project Delivery).

Pump Station:

A complete pumping installation, including a storage box, pump or pumps, standby pumps, connecting pipes, electrical equipment, pumphouse and outlet chamber.

Rainy Season:

The Department's rainy season corresponds to the dates noted on Figure C-1.

Receiving Water Limitations:

Permit water quality limitations applied to dischargers to prevent violations of water quality standards.

Receiving Waters:

A river, lake, ocean, stream or other watercourse into which wastewater or treated effluent is discharged as provided in the "Terms of Environment" (U.S. EPA Office of Communications, Education, and Public Affairs; December 1997).

Regional Water Quality Control Board (RWQCB):

"Regional Board" means any California regional water quality control board for a region as specified in Section 13200 of the California Water Code.

Regional Work Plans:

Annual detailed plans subject to the approval of the RWQCB that describe when and how the various programs and BMPs contained in the statewide SWMP will be implemented by each District in each RWQCB jurisdictional area.

Resident Engineer (RE):

The RE administers the construction contract. The RE makes decisions regarding acceptability of material furnished and work performed, and exercises contractual authority to direct the contractor. The RE may impose sanctions if the contractor fails to take appropriate actions specified in the contract to correct deficiencies. RE storm water responsibilities are described in Section 4 (Program Development).

Risk Assessment:

The qualitative and quantitative evaluation of the risk posed to human health and/or the environment by the actual or potential presence and/or use of specific pollutants.

Sanitary Sewer:

Underground pipes that carry off only domestic or industrial waste, not storm water.

Sediment:

Organic or inorganic material that is carried by or is suspended in water and that settles out to form deposits in the storm drain system or receiving waters.

Sediment Load:

Sediment particles maintained in the water column by turbulence and carried with the flow of water.

Site:

The land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

Slope:

Any area with a grade of 1:20 (V:H) or more.

Soil Stabilization:

Erosion control measures used to minimize erosion.

Specific Conductance:

Rapid method of estimating the dissolved solid content of a water supply by testing its capacity to carry an electrical current.

Spill:

An accidental dumping or spilling of a potential pollutant onto the ground or into a waterway.

State Transportation Improvement Plan (STIP):

A capital improvement program of transportation projects funded with revenues from the State Highway Account and other sources.

State Water Resources Control Board (SWRCB):

As delegated by EPA, California agency that implements and enforces CWA Section 401(p) NPDES permit requirements, and is issuer and administrator of the Permit. Works with the nine RWQCBs.

Storm Drain Inlet

A drainage structure that collects surface runoff and conveys it to an underground storm drain system.

Storm Water:

Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm Water Advisory Team (SWAT):

The Department's teams with responsibility for evaluating new or modified storm water BMPs (Maintenance SWAT, Project Delivery SWAT, and Water Quality SWAT).

Storm Water Drainage System:

Streets, gutters, inlets, conduits, natural or artificial drains, channels and watercourses, or other facilities that are owned, operated, maintained and used for the purpose of collecting, storing, transporting or disposing of storm water.

Storm Water Pollution Prevention Plan (SWPPP):

A general description of SWPPPs is provided in the Fact Sheet for the General Permit for Storm Water Discharges Associated with Construction Activity, Order No. 99-08-DWQ (NPDES CAS000002). This Fact Sheet and the permit are posted at: http://www.swrcb.ca.gov/stormwtr/docs/constpermit.doc

Storm Water Quality Task Force (SWQTF):

An advisory body to the SWRCB on the California storm water management program; includes staff from regulatory agencies, municipalities, industries, consultants and others. The SWQTF meets bimonthly for information sharing. The SWQTF also makes recommendations to the SWRCB regarding storm water management.

Sump:

In drainage, any low area that does not permit the escape of water by gravity flow.

Surface Runoff:

Precipitation, snow-melt or irrigation water in excess of what can infiltrate the soil surface and be stored in small surface depressions.

Temporary Construction Site BMPs:

BMPs only temporarily required to address a short-term storm water contamination threat.

Temporary Soil Stabilization:

Soil stabilization controls that provide storm water quality management during construction.

Toxic Pollutants:

Those pollutants defined in the federal regulations at 40 CFR 401.15 (pursuant to Section 307(a)(1) of the CWA). These pollutants include copper, lead, zinc many chlorinated organic compounds, including pesticides and other constituents sometimes found in wastewater.

Vegetation Control:

Maintenance of vegetation on facilities owned by the Department by a combination of chemical application (herbicides) and mechanical methods (mowing, cutting, etc.).

Vista Point:

A paved area beyond the shoulder that permits travelers to safely exit the highway to stop and view a scenic area. In addition to parking areas, trash receptacles, interpretive displays, restrooms, drinking water and telephones may also be provided.

Waste Discharge Requirements (WDRs):

WDRs are permits issued in California for the discharge of wastes to waterways or to land pursuant to the Water Code section 13260. In accordance with Water Code section 13374, the term "waste discharge requirements" is equivalent to the term "permits" used in the Clean Water Act.

Waste Load Allocation (WLA):

The maximum load of pollutants each discharger of waste is allowed to release into a particular waterway. Discharge limits are usually required for each specific water quality criterion being, or expected to be, violated. Also, the portion of a stream's total assimilation capacity assigned to an individual discharge.

Water Quality Program:

The Department's Headquarters group that assists the Headquarters functional Programs, the Districts and the Department's transportation partners in complying with federal and state laws regarding water pollution. See Statewide SWMP Section 2.3.3 for a more detailed description.

Water Quality Standards:

State-adopted and EPA-approved ambient standards for water bodies. The standards prescribe the use of the water body and establish the water quality criteria that must be met to protect designated uses.

Watershed:

The drainage basin contributing water, organic matter, dissolved nutrients and sediments to a stream, estuary or lake.

Waters of the State:

Any water, surface or underground, including saline waters, within the boundaries of the state.

Water Pollution Control Program (WPCP):

A plan to identify water quality management practices to be implemented that must be prepared for all construction projects that do not require preparation of an SWPPP.

Water Quality Volume:

The water quality volume is the volume of runoff produced by the equivalent of, at a minimum, the 1-year, 24-hour storm event.

Wetland:

Those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support vegetation typically adapted for life in saturated soil conditions. Generally includes playa lakes, swamps, marshes, bogs, mudflats, natural ponds and similar areas.

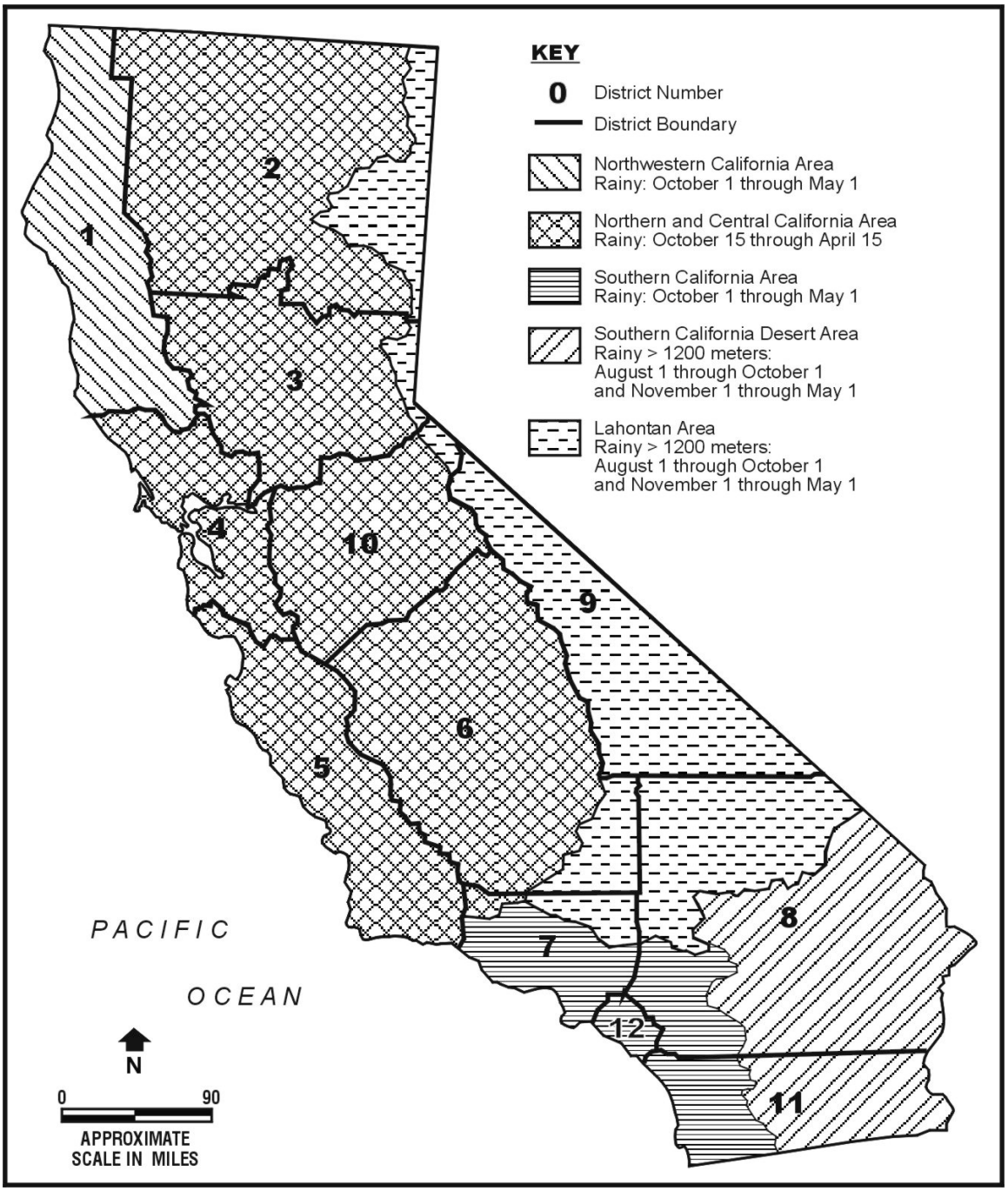


Figure C-1
Designation of Rainy Seasons